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SEMINAR ON PLACEMENT OPPORTUNITIES

ROLE OF STUDENT LEADERS IN POPULATION EDUCATION

Association of Indian Universit

ACHARYA N.G. RANGA AGRICULTURAL UNIVERSITY

ADMINISTRATIVE OFFICE : RAJENDRANAGAR : HYDERABAD-500 030

Advt. No.4/RC/99, Dated: 15-11-1999

Applications in the prescribed form together with registration fee of Rs.100/- for others and Rs.50/- for SC & ST candidates are invited for the undermentioned posts. Candidates should possess the prescribed qualifications as on the date of this notification. Number of posts for each of the categories is indicated in parenthesis. The categories OC, BC-A, BC-B, BC-C, BC-D & Orthopaedically Handicapped (Men) are indicated as O, A, B, C, D & O.H(M) respectively. The 'W' in each category indicates the reservation for Women. In respect of the Professor posts, if suitable women candidates are not available, such posts shall be filled by male candidates.

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Assistant Professor & Equivalent : (79)

1) Agricultural Engineering-5 (O-2, OW-1, B-1, D-1); 2) Agronomy-19 (O-8, OW-3, AW-1, BW-2, C-1, SC-2, SCW-1, STW-1); 3) Entomology-15 (O-4, OW-3, A-2, B-1, DW-1, SC-2, SCW-1, ST-1); 4) Genetics & Plant Breeding-5 (O-2, OW-1, B-1, ST-1); 5) Horticulture-6 (O-3, OW-1, D-1, SC-1); 6) Plant Pathology-11 (O-4, OW-2, AW-1, BW-1, D-1, SC-1, SCW-1); 7) Soil Science & Agril.Chemistry-18 (O-6, OW-3, A-1, A-1(Physics), B-1, D-1, DW-1, SC-1, SCW-1, STW-1, O.H (M)-1)

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Professor & Equivalent: (9)

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Associate Professor & Equivalent : (22)

1) Animal Genetics & Breeding-2 (O-1, SC-1); 2) Animal Nutrition-2 (O-1, B-1); 3)Clinical Veterinary Medicine-1 (ST-1); 4) Livestock Production & Management (Animal)-3 (O-1, OW-1, SC-1); 5) Livestock Products Technology-1 (A); 6) Veterinary Anatomy & Histology-1 (O), 7) Veterinary & Animal Husbandry Extension-2 (O-1, BW-1); 8) Veterinary Biochemistry-1 (ST), 9) Veterinary Epidemology & Preventive Medicine-1 (OW); 10) Veterinary Parasitology-2 (O-1, B-1); 11) Veterinary Pharmacology & Toxicology-3 (O-2, SCW-1); 12) Veterinary Public Health-1 (D); 13) Veterinary Surgery & Radiology-1 (OW); 14) Senior Scientist-1 (AICRP on Pigs, Tirupati).

Assistant Professor & Equivalent : (56)
1) Animal Genetics & Breeding-7 (O-2, OW-1, B-1, DW-1, SC-1, SCW-1); 2) Animal Nutrition-6 (O-2, OW-1, A-1, D-1, SC-1); 3) Animal Reproduction, Gynaecology & Obstetrics-5 (O-1, OW-1, B-1, SC-1, ST-1); 4) Clinical Veterinary Medicine-3 (O-1, OW-1, A-1); 5) Fishery Science (Acquaculture)-2 (O-1, B(W)-1), 6) Fishery Science (Fishery Biology)-1 (ST); 7) Fishery Science (Limnology & Oceanography) -1 (OW), 8) Livestock Production and Management (Animal)-4 (O-2, B-1, SCW-1); 9) Livestock Production and Management (Avian)-4 (O-1, OW-1, D-1, SC-1); 10) Livestock Products Technology-1 (D), 11) Veterinary Biochemistry-1 (O), 12) Veterinary Epidemology & Preventive Medicine-2 (OW-1, B-1); 13) Veterinary Microbiology-1 (SC); 14) Veterinary Parasitology-4 (O-2, OW-1, BW-1); 15) Veterinary Pathology-2 (O-1, SCW-1); 16) Veterinary Pharmacology & Toxicology-3 (O-1, OW-1, AW-1); 17) Veterinary Physiology-4 (O-1, BW-1, SC-1, STW-1); 18) Veterinary Public Health-2 (O-1, OW-1); 19) Veterinary Surgery & Radiology-3 (O-2, C-1).

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V. PRABHAKAR RAO
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Social Development Through Distance Education

Santosh Dhar*
Upinder Dhar**

The saying that knowledge is power has acquired a new significance in the present environment. The field of knowledge is expanding very fast. Rapid developments taking place world over have made imperative to inculcate intellectual ability in the students to enable them to cope with complex situations. Special care needs to be taken in making various educational programs compatible to the changing requirements of the present scenario. Adaptability and Innovation have to be an indispensible part of educational credo since education is now no more confined to the young growing students. Today everybody is expected to be upto date in his knowledge irrespective of his age and status. In view of this, a number of educational institutions in India have designed specialized courses through distance learning programs. The courses have been planned in such a manner that the participants need not to undergo classroom lecture method but acquire knowledge, step by step through self-direction and in style of self interaction leading to one's individual development which in turn leads to social development. The present paper is an attempt to explore the status of distance learning mode in India as perceived by the students.

Change is all pervasive and inevitable, whereas its nature and the rate at which it takes place varies with time, space and the field of operation. In the case of higher education changes have traditionally been slow, mainly because of its elitist nature and the ivory tower existence of its institutions. Although after World War II, the higher education systems world over have undergone transformation from elite systems to mass systems. At the same time, there have been remarkable developments in communication technology. Consequently changes are more rapid and radical.

The existing model of higher education requiring selective learning over a specified period is being replaced by a model of life time learning for all. This has become necessary because of the changing nature of jobs which now require continuous renewal and updating of knowledge and skills (UNESCO, 1995). Throughout the world higher education is undergoing a paradigm shift from an instruction-centered college university model to a learner-centered integrated network model which is based on access to learning resources and student initiative (ICDE, 1996).

Distance education, which is commonly regarded to be an industrialised form of education has evolved as a natural consequence of the acceptance by society of the life time learning for all (Peters, 1996). This is exemplified by developments in the Western World. Considerable expansion in distance education programs is largely as to relate it to updating of skills and to knowledge enhancement. Courses leading to degrees have probably not developed to the same extent, though open education institutions are expected to take over some load from the institutions of formal education.

**Associate Professor, **Director, Prestige Institute of Management and Research, Indore-452 010.*

The distance education system should not be made a tool for resource generation for the universities rather state should provide liberal financial assistance (Reddy and Tenneti, 1998). Alternately, distance education institutes need to be granted independent status and should not function as subservient to the traditional universities. It is only then that they can come out of the grip of the traditional rigidity in the spheres of rules and regulations imposed by the universities. Autonomy to distance education institutes can help them to come out of the bureaucratic style of functioning and raise work efficiency. They can be groomed as centres for off-loading the universities in imparting education.

At the threshold of 21st century, the success of distance learning system is getting correlated to its commitment to technology particularly the technological support required for the media, which is important for enhancing its reach to the students.

Teleconferencing, radio paging, satellite communication and group telephone tutorials are new watchwords for interactive communication. In India, such facilities can only partially be offered by the study centres.

Despite the Government support being what it is, the multimedia production institutions, the AVRCs and EVRCs, are busy in producing course related audio and video cassettes for the students of various disciplines (Goel and Sarangi, 1997). As the time available on the national TV channel is inadequate for proper telecast and viewing of such academic packages as a support device to the students, a separate channel is required to be set up.

The distance learners are basically independent self-learners, may be employed and with other societal and family responsibility. They basically depend on the self-learning materials supplied by the distance learning centres. But here students run the risk of being turned into passive consumers of educational commodities such as packets of knowledge and educational certificates (Kaye and Rumble, 1981). However, research has shown that most of the distance learners do not have the ability to select and critically evaluate information and therefore fail to take the advantage of the resources available at public libraries (Burge et al, 1989). The process of learning these skills is a key factor in learning how to learn and towards empowering students to become independent life long learners (Shklanka 1990).

In India, print media is the only dominant sole saviour to sustain the system of distance education. There is no doubt that the self-instructional printed lessons are the foundation of any academic course to sustain it but the quality, comprehension level, content, applicability and outreach of the printed material is equally important. Although distance education institutions have been thriving on the unidirectional supply and flow of information to students through printed lessons, a practical overhaul in its delivery system and more articulate, systematic, contextually relevant student focused support system is called for to supplement the quality and content of such courses. There is no doubt that distance education provides answer to the contemporary challenge of access, equity, cost and flexibility in higher education. It is looked upon as an alternative with a social outlook which promises to bring about social gains through numerous technology assisted inputs. It is now a fast expanding system which has a strong scientific and management base to ensure its success. But all these attributes of the system can be socially acceptable only if the focus is not merely on entry rules, flexibility in course choice, and time frame but also the inputs that would contribute to the enhancement of the level of comprehension of the students. Thus, the quality of student support services are of paramount importance in distance education.

References

1. Allport, G.W. (1935), Attitudes. In Murchison, Carl (Ed.) *Handbook of Social Psychology.* Clark University Press.

2. Burge, E.J.; Snow, J.E. and Howard, C. (1989). *Developing partnership Investigation of Library based relationships with students and educators participating in distance education in Northern Ontario.* Ontario Institute for Studies in Education : Toronto.

3. Fishbein, M. and Ajzen, L (1975). *Belief, Attitude, Intension and Behaviour : An Introduction to Theory and Practice.* Mass, Addison-Wesley.

4. Foks, J., (1995). Technology and Learning. *Open Learning through Distance Education, 1(3).*

5. Gandhe, S.K. (1998). Distance Education : Role of New Technologies in the 21st Century. *University News 36(33).*

6. Garrison, D.R., (1989). Distance Education in Merriam, S.B. and Cunningham, P.M. (Eds.) *Handbook of Adult and Continuing Education,* Jossey-Bass, San Francisco.

7. Goel, D.R. and Sarangi (1997). Interactive Distance Education. A Summative view of Indian Tele-conferences. *University News 35(42).*

8. ICDE, (1996). The Educational Shift : Implications for ICDE and the Distance Learning Community, *Report of the Task Force*

of the International Council for Distance Education Standing Committee of Presidents, p. 22.

9. James, W.B. and Gardener, D.L., (1995). Learning Styles, Implications for Distance Learning; in Rossmann, M.H. and Rossmann, M.E. (Eds.) *Facilitating Distance Education, New Directions, for Adult and Continuing Education, 67.*

10. Kaye, A. and Rumble, G. (1981). *Distance teaching in higher and adult education.* Croom Helm, London.

11. Khan, I. (1982). *Suitability of Teaching English through Correspondence Courses as Offered by Some Indian Universities at the First Degree Level.* Doctoral Dissertation. Utkal University, Bhubaneswar.

12. Kumar, Anil (1999). Kumar's Scale for Measuring Distance Learner's Attitude Towards Distance Education. *University News 37(2).*

13. Nagpal, S. (1992). *Investigation into the Usefulness of Distance Education.* Project Report, Diploma in Distance Education, IGNOU, New Delhi.

14. Panda, Santosh, K. and S.S. Chaudhari (1989). Attitude, needs and problems of prospective distance teachers. *Media and Technology for Human Resource Development, 2(1).*

15. Pandey, Saroj (1991). Teachers' Attitude Towards Distance Education. *Journal of Indian Education, 16(5).*

16. Peters, Otto, (1990). In Keegan Desmond. *Foundations of Distance Education* Routlege, London.

17. Peters, O, (1996), Distance Education is a Form of Teaching and Learning Sui generis : R responses to 'Labour Market Theories and Distance Education, *Open Learning*, (1).

18. Pottiez, J.M. (1994). Distance Education and the New Technologies : A New Adventure in knowledge and communication in Husen, Torsten (Eds). *The Role of the University . A Global Perspective.* UNESCO, Paris.

19. Ram, S. (1984). *An Evaluation of Correspondence Education in Terms of Cost and Academic Performance.* Doctoral Dissertation, Meerut University, Meerut.

20. Reddy, S.V. Rajashekhar and Reddy, G. Malla. (1997). Profile of Distance Learners. *University News 35(4).*

21. Reddy, Venkat M. and Tenneti, Vijaya Chandra (1998). Distance Education and Privatisation of Higher Education. *University News 36(81).*

22. Renu, Arun (1990). *A Study of Success in Distance Learning System in Relation to Some Key Learned and Institutional Variables.* Doctor Dissertation, Kurukshetra University, Kurukshetra.

23. Sahoo, P.K. (1985). *A Study of the Correspondence Education in an Indian University.* Doctoral Dissertation. M.S. University of Baroda, Baroda.

24. Sahoo, P.K. and Bhat, V.D. (1987). Students attitude towards correspondence system of education. *Journal of Indian Education, 13(2).*

25. Shklanka, O. (1990). Off-Campus Library Service : A Literature review. *Research in Distance Education 2(4).*

26. UNESCO, (1995). *Document Policies for the Change and Development of Higher Education*, Tokyo, UNESCO. ☐

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REGISTRAR

How to Read a Paper at Seminar
(Rather How Not to)

P.V. Pathak*

As one goes to a seminar to read a paper, he must keep in mind about many others who too have come to present their papers. All through the seminar the only admonition that keeps ringing in ears is to restrict the presentation to 10-20 minutes. In spite of this, year after year, the paper readers have exceeded their time limits, sometimes to the extent of being physically removed from the dais.

Presenting a paper is indeed different from delivering a Presidential address or a Guest Lecture. In a lecture of 45-60 minutes one can expound the line of thinking, present detailed analysis of the facts, point out allied literature and delve on the recent avenues of research. Presentation of a paper has altogether different function. It is to bring to the notice some unique features of a subject or an altogether new discovery.

Publication Vs. Presentation

It is more or less taken for granted that those engaged in academic and research institutions will continue to explore new avenues of knowledge, rationalise the dispersed data and present coherent picture of the subject matter under consideration. They can bring their findings to the notice of fellow researchers by publishing their findings in research journals and reading papers at the seminars held on the related topics. While the research publications have their own importance, presentation before knowledgeable audience has many more advantages.

A published article is likely to be read by a few who get hold of the particular issue : there are fewer still who read it carefully. No doubt, publication of a research paper adds to the credibility of one's research. It has longer life and can be referred for many years to come. Presenting it at a seminar is an opportunity to present one's findings to many more and to open dialogue at off times. In the limited span of presentation, if done effectively, one can at a time convey his findings to a large audience. It is therefore necessary and fruitful that reading paper at a seminar should be given more importance by the researcher. He should strive to make it more effective so that unique findings are conveyed to as many as are present at the seminar.

A research paper is an outcome of research conducted over long period. Long hours in the field or laboratory, back breaking reading in the library or study rooms, midnight oil burning for writing and rewriting drafts result in a research paper text. It is unique amalgamation of imagination, old and new ideas, resulting into hypothesis, analysed in the light of old or new evidences. It could also be simply unearthing of altogether new idea not ever thought over.

A paper presentation at a seminar or a conference should bring out new facts or discoveries, analysis of old literature or data to arrive at different conclusions, exposition of new hypothesis along with supporting facts and figures.

A paper should never be presentation of one's old findings in new phraseology, like old wine in a new bottle. It is also unethical to keep on repeating the same contents of a paper at seminar after seminar, year after year.

Taking into consideration that a paper one is presenting at a seminar has something new and unique, it will be worthwhile to focus attention of audience on these unique findings. Then only the purpose of reading a paper at a conference or a seminar will be served.

Restriction on Time

As the seminar programs are usually organised there are inaugurations at the hands of Chief Guests, Presidential Addresses, Guest Lectures, visits to important sites connected with seminar topic etc. All these have their due importance. That apart, there area sessions for presentation of papers. Usually these are overbooked. In all the cases the seminar organizers call for abstracts of papers and full texts etc well in advance. However there are often the last minute horse riders who come flying with their papers to be included in the presentation list. Organizers cannot always avoid them. They too have to be accommodated. This

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results in the restrictions on the time of paper reading by individual researchers, often limited to ten minutes. In the following paragraphs author outlines the mode of presentation of a paper in ten minutes, followed by 5-10 minutes of question answers.

Let it be clear in the beginning that reading a paper in ten minutes should not be virtual reading of text word by word. In such a short time one can read no more than 3-4 full scape papers at high speed while the paper text may run into 15-20 or even more pages. It is usually observed that those who come to read the paper come prepared to read it at *verbatim*. It is wrong. By mere reading the contents one can-not convey to the audience his views. The audience too get bored and the presentation is added to the list of also read papers.

Prolonged Presentation

Unless it is a full length lecture of 45-60 minutes it is observed that prolonged presentation most of the time reduces impact of presentation. As one goes on reading the text end on, listeners loose interest in the contents. This makes the reader nervous. He then rushes through pages often omitting important aspects. Thus the presentation becomes more and more incoherent. He has only satisfaction of having read a paper at such and such seminar.

By exceeding the time limit one is doing great injustice to the fellow researchers. A prolonged presentation creates murmur not only in the minds of fellow researchers, but the organizers too. An embarrassed chairman of a session often finds it awkward to ring bell more frequently. Question-answer sessions after such a prolonged presentation are often skipped. Even if held, they do not bring out the related data and do not provoke new ideas or lively discussions in the off time. This is a great loss on the part of researchers that they could not provoke thinking from their fellow researchers in their own topics of interests. Exchange of ideas, cross fertilization of diverse disciplines and breakthroughs can be achieved only by provoking thinking in the receptive minds. That is the purpose of organizing seminars.

Excepting the case when it is an altogether new idea not thought previously, any research paper text contents follow a set pattern. It starts with a) enunciation of a problem and its importance b) Literature survey and current position, c) highlighting of new facts, d) analysis of evidence either old or a new followed by e) summary and conclusions.

It is worth while remembering that great and apoch making discoveries can be summarized in a few lines or even few words. Take for example a simple equation of the mass energy equivalence $E = mc^2$ summarise the result of theory of relativity. Then why should it not be possible for any researcher to present his finding in a stipulated time of say 10 minutes. The researcher after having prepared the full text himself should project his contribution to the subject. If he is clear about it, he will soon shift the contents and prepare the presentation material which focuses on these specific aspects. It will require little bit of mental discipline and consideration for others standing in the queue for presentation. One is encroaching their precious time of presentation by prolonged presentation.

Modus Operandi

10 minutes of time allotted to read the paper should be judiciously utilized. It should be properly divided for presenting unique features of the paper. Although there is no mathematical formula, or rule for allocation, one has arrived at thumb rule for time utilization based on experience.

First 2 minutes should be utilized for bringing to the notice of the audience, the nature, definition and importance of the subject matter of the paper.

The next 2 minutes should be spent on summarising the major reference and data, mention of 1-2 prominent researchers in the field, their unique findings should be highlighted.

Then should follow the main presentation briefly pointing to the unique features, one or two details of supporting evidence, sources of evidence. If possible comment on reliability of major source of evidence. This often provokes audience to pay more attention. It should take about 4 minutes.

The last 2 minutes should be spent on highlighting the unique finding ending the presentation by directing new avenues for further researches.

Slides and Transparencies

Visual aids like projection of slides and transparencies etc are very helpful and in a short time of exposure convey much more than pages of reading matters. It is observed that very often this medium is over utilized and therefore looses impact. For any audience to get full grasp of the picture of a transparency projected in the sequence, it takes 1-1.5 minutes. If the slide is properly explained this time can be very well utilized. It puts restrictions on the number of slides to be presented. It is therefore felt that 4-5 slides of utmost importance can be covered during the presentation with due justice to the figures and graphs by way of elaboration. There should be only one figure or a graph per slide or transparency. When the slide contain only reading matter, no more that 4-5 lines in bold letters should be projected. This will enable even the back benchers to have clear view of the projected matter. Reproduction of full typed page of any text running more than say 5-6 lines completely negates the purpose of slide projection.

Thus when one is presenting complete theme of a paper with the help of slides, first 2 minutes should be spent on opening the topic with background information followed by 5-6 slides explaining significance of each slide projected. Last 2 minutes should be spent on summarizing the presentation.

Communicating with the Audience

While presenting a paper it is always better that one has main points of the paper separately written in bold letters. So by just looking at these points they can be recapitulated and elaborated.

One should not look all the while towards text of paper or even points jotted. Do not bother to break the link or flow of talk if a point or two are missed. If the points are prepared with logical sequence this missing of points reduces considerably. Look at the audience, establish visual communication with a few in audience, who appear to be intently listening to your talk. This renders the presentation very effective. It also automatically conveys your contribution to the majority of the audience. It is the most important achievement of the presentation. The question answer session become more lively after such a presentation and the impact of the presentation then can be felt for the rest of the seminar period. This is really a feather in one's cap.

Conclusion

Remember you are not the only one to read a paper at a seminar. Do not read paper word by word. Summarise point by point your contribution to the text. Restrict number of slides of transparencies to 5-6. Establish visual contact with a few interested audience. Project your contribution more emphatically. ❑

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A Critical Assessment of the Contributions of the DACEE in Higher Education

— A Case Study of Delhi University : Retrospects & Prospects

Rajesh*
D.D. Aggrawal*

In the ninth plan every university has been requested by the UGC to establish a Department/Centre of Adult, Continuing Education, Extension work (DACEE) and field-outreach. The adult education, continuing education and outreach activities should become an integral part of all departments and constituents of the university through the optimum involvement of teachers and students. The Department/Centre of Adult and Continuing Education needs to serve as a focal agency. It should initiate and facilitate extension programmes in academic departments of the university. Extension work in these departments should be a part of the curriculum of the students and should be part of the work load of faculty also. Extension as the third dimension of higher education should be integral to academic work in its fullest sense, to strengthen the academic base of the students.

The Department of Adult, Continuing Education and Extension, University of Delhi had it beginning in 1976 when the University Grants Commission in their policy frame of higher education had recognized 'Extension' as the third dimension of the university system.

In 1980, the University Grants Commission accepted the University's proposal to formulate a detailed and long-term plan on alternate education needs of the city of Delhi. The plan resulted in a sanction for a regular centre for adult, continuing education & extension in 1982; it later became a full-fledged department under the Faculty of Social Sciences in 1985.

Academic Programmes of the Department

The department offers one year post M.A. Diploma Course in Adult, Continuing Education. The one year post M.A. course has five theoretical papers and one case study/dissertation. The one year full-term course is aimed at training manpower in the field of adult, continuing and extension and to build a knowledge base through teaching and research in the area of non-formal education. Nearly 20 students are enrolled in the current batch (1999-2000 A.D.) in this course.

In addition to this one year full term course, the Department has 20 short term approved courses of the University of Delhi. The courses are short term, need based and non-credit. Science and Sports Journalism, Modern Mathematics for Parents, Public Interest Litigation are some of the highly popular short term courses among the students.

Success Stories of the Academic Programme

The students of post M.A. Diploma have been employed in State Council of Education & Training (SCERT), District Institute of Education & Training, Department of Adult and Continuing Education, Ministry of Education and the governmental and non-governmental organizations. The students who are already B.Ed./M.Ed. with postgraduation have been benefited more in getting the opportunities in various sectors. The students of Journalism are employed in several daily newspapers, weekly newspapers, UNI, PTI and in journals/magazines. Modern Mathematics for Parents course is highly popular course among parents professionals and those who want to utilize the leisure time.

However, the department should initiate some innovative courses after the need assessment of undergraduate and postgraduate students of Delhi University.

Research

The department has Ph.D. programme in the field of Adult, Continuing Education and Extension Education and in the related field of Social Sciences. So far, one student is awarded from the Department and three students are enrolled as Ph.D. scholars.

Under the student based research, nearly 100 case studies/dissertations are prepared on the major themes such as :

i. Adult learning

**Project Officer, Department of Adult, Continuing Education & Extension, University of Delhi, Delhi.*

ii. Linking literacy and population issues.
iii. HIV/AIDS/substance abuse.
iv. Women's issues and gender perspective.
v. Family planning/Family welfare.
vi. Vocational/Career Oriented issues.
vii. Health & Quality of Life issues.
viii. General Aspects.

The Department is in process of compiling these studies as a part of student based research. Some of the case studies/dissertation are empirical studies recognized at national level. One study Knowledge and Awareness of Commercial Sex Workers on HIV/AIDS and Sexuality is considered as an empirical study by Ministry of Health & Family Welfare (MHFW).

The research has remained by and large a neglected area of the Department, this need to be further strengthened. The quality of research need to be maintained by involving the experts within the related discipline under the faculty of social sciences.

Extension

Extension as the third dimension is an umbrella term which includes adult education, continuing education, population education and field-outreach activities. This dimension aims to promote a meaningful and sustained rapport between the universities and the community. From the beginning, the UGC has emphasized area based approach. Under the extension as third dimension, the major extension education programmes of the Department are as follows :

Adult Education : The Department in the past was involved in eradication of illiteracy and training of Adult Education functionaries. Several areas of Delhi such as Wazirpur, Gopalpur, Timarpur, Majnu Ka Tila were adopted for the eradication of illiteracy programme. Gradually, the centre based approach was phased out by the UGC. After the phasing out of centre based programme, not only in Delhi University but in many universities, Adult Education as an extension programme remained marginalised. However, the core staff remained involved in training, curriculum development and development of learning materials at the SCERT, DIET, SRC, NLM level depending upon the core staff's personal academic involvement. The status of Adult Education in the Department as an extension programme has been under question since the eighth five year plan. The status continue till date.

Continuing Education : Under the continuing education programme, the Department of Adult, Continuing Education & Extension has been undertaking two types of programmes.

i. Short term need based courses in the colleges.
ii. Short term need based courses in the adopted communities.

The Department as discussed in academic programmes has adopted 20 courses and few courses i.e. Science, Sports, Journalism, Modern Mathematics for Parents and Public Interest Litigation are very popular courses.

At the community level, Chair-Caning, Food & Nutrition, Tailoring & Cutting, Beautician are some of the popular courses. However, these courses are currently not being pursued since several years due to the lack of the interest by the concerned officials. However, several community based courses are conducted by motivated staff.

Population Education Club : The University Grants Commission as a part of National Policy on population initiated setting up of population education clubs in the colleges. Population education club has been a major opportunity to educate and make aware college students on the issues pertaining to population and quality of life, developmental and health issues through curricular and co-curricular programmes/activities. Initially, there were 40 and then 20 Population Education (PE) clubs. Since 1992 PE club activities were not pursued by the Department and in the meantime, new guidelines of CE and PE was issued by the UGC under the ninth five year plan.

New Integrated Guidelines for CE and PE at the College Level

In the 9th Plan the University Grants Commission has approved Rs. 10,000 for Population Education Club (PEC) and Continuing Education Centre (CEC) in each college. This was done to create awareness regarding various population issues among college students, and through them in the communities. PEC and CEC in the light of paradigm shift recommended in the plan of action of International Conference on Population and Development (ICPD Conference, 1994). The college programme is designed to increase awareness, improved attitudes and develop responsible behaviour among college students with respect to

a. Reproductive Health
b. Gender Issues

c. AIDS
d. Drug Abuse
e. Environmental Issues
f. Population and Development Issues
g. Other quality of life issues.

University of Delhi under the Department of Adult, Continuing Education & Extension had 40 Population Education Clubs before 1992. However, after 1992 only few activities have been pursued through this department in the colleges. The department is in process of reviving college based activities.

Population Education Resource Centre

The University Grants Commission in collaboration with UNFPA started Population Education Resource Centres in 17 universities in the Department of Adult, Continuing Education & Extension. The PERCs have been started to provide technical resource support in terms of Learning Materials, Training, Curriculum Development, Research Monitoring & Evaluation in the serve area universities decided by the UGC.

The Department of Adult, Continuing Education, University of Delhi had also been given one population education resource centre in 1985. Since 1985, the PERC has developed number of learning materials for the students, teachers and for the community. Training programmes for the college teachers/faculty members and orientation for the college principals have also been organised. The PERC has also developed several video-based education films televised on national network.

The PERC is one of major concerns of the Department and has been continuously functioning even after 1992. It has developed 'Folder on AIDS', 'Question Bank Series-I', Newsletters in Population Education and conducted number of training programmes for the peers, college teachers, hosteleres and for the communities.

Counselling Under PERC

The PERC has initiated telephonic counselling and personal counselling services under phase-II of the programme (1994-1998). A separate personal and referral unit has been started in the university health centre with the approval of the university, posters, pamphlets and folders have been developed on the counselling services. The media (print & audio-visual both) have widely responded to these activities.

The PERC entered in the third phase known as 'Population and Development Education in Higher Education, (1999-2000 A.D.). The PERC has set-up an Advisory Committee to monitor the programme and it has also set up a technical advisory committee to monitor counselling services. The PERC under this phase will further strengthen the activities in the service area universities (all universities of Delhi & Haryana).

IGNOU Study Centre

The Department has also been assigned an IGNOU study centre for some courses offered by Indira Gandhi National Open University. Several courses at postgraduate levels are offered through this study centre.

National Open School Study Centre

The Department has also been accredited as study centre of National Open School. It offers academic and vocational courses for the students at 10+2 levels.

The Department has shown interest in continuation of IGNOU and NOS centres.

Core (Academic) Staff

The Department has two Readers and 5 lecturer level staff and 3 technical/research staff to undertake various activities. The Dean, Faculty of Social Sciences has been heading the Department since 1992.

Critical Assessment of the Department After 1992

The UGC Expert team in its observation in Mumbai Meeting in 1998 has commented that the Department in the last few years has lacked visibility. The Expert team has hinted towards submission of the revised 9th Plan proposal recommending, filling up the posts and appointing a regular full-time Head of the Department and submission of audited statement of accounts.

The observations of the expert team needs critical review. The Educational Consultants India Limited in the PERC Report highlighted several achievements of PERC. After 1992, the PERC at University of Delhi faced evaluation team twice and the achievements were remarkable. One significant feature that the UGC, the Vice-chancellor and the Dean as the head of the department need to understand is that the success of either PERC or IGNOU/NOS was due to the motivated coordinators (respective project officers) and the academic leadership of the Dean, Faculty of Social Sciences in facilitating the respective project officers to continue/initiate innovative activities, though frequent changes of Deans has created problems for the academic staff. Recent decisions of change of some co-ordinators due to undue pressures by some academic staff need to be reviewed further by the current head of the department.

The academic (core staff) of the Department have several achievements such as Ph.D., contribution of articles in national/international journals and participation at national/international seminars and workshops. The achievements of the academic staff need to be documented and circulated for information and record.

The Areas of Immediate Concern

The process of promotions need to be initiated in order to develop an alternative of the headship by rotation. The left-out posts at the higher levels should also be filled up in order to provide enough attention to the academic activities of the Department. The university should understand that this is the high priority department of the UGC. The Department also needs networking with the various social science departments, governmental and non-governmental organisations. The PERC at University of Delhi has developed networking with several agencies and the report was sent to the UGC.

The Department needs to identify the focus areas under the 9th five year plan of the University Grants Commission, skill development programme and short term need based courses for the students required to be further strengthened.

The Department within very short span of time achieved remarkably in the field of extension education. The achievement needs to be highlighted further. It also needs a balance between the academic and extension programmes. However, the university is yet to understand extension as the third dimension. By and large, the university concentrates on classical model of teaching and research. The Department has to increase the Advocacy programmes for the planners, administrators and college principles to make understand the new dimension — extension in the university system.

Prospects

The Department needs leadership to academically continue the innovative activities/programmes under the 9th five year plan. The syllabus of post M.A. Diploma in Adult, Continuing Education needs immediate changes in view of the paradigm shift in the areas of extension education. The teaching programmes need preparation and publication of high quality teaching and learning materials.

The PERC in the new phase under Population and Development Education in Higher Education (1999-2001) require wide preparations for the success by involving Advisory Committee members, service area directors and the heads, Dean of the university concerned. This is one programme which continues to function normally even after 1992 till date due to motivated core staff (PERC) and the understanding of the Dean as the Head & Director.

The University should form a committee of the academicians having experience in the field of extension education under the Chairmanship of Dean, Faculty of Social Sciences to continuously monitor the performance and the weaknesses of the Department. In view of the clear-cut guidelines issued by the UGC (reference 9th Plan UGC Document pertaining to the Department/Centre of Adult, Continuing Education, the University must redesignate Project Officers and Assistant Directors as Lecturers & Readers as in the case of Jamia-Millia-Islamia).

The Department should form committee of the courses and Departmental Research Committee to facilitate quality research leading to Ph.D. degree.

The prospect of the Department is very bright if the University pays attention to some of the basic questions. In spite of the problems, the achievements of some of the faculty staff are highly remarkable.

Tabular Presentation of some Facts

App. Enrolment Pattern in post M.A. Diploma in Adult, Continuing Education

Intake Capacity	Year of Enrolment	Appears in the exam.
20	1984-85	20
20	1985-86	20
20	1986-87	19
20	1987-88	16
	Enrolment since 1992	
20	1992-93	10
20	1993-94	9
20	1994-95	5
20	1995-96	16
20	1996-97	11
	1997-98	9
20	1998-99	5
20	1999-2000	Current batch

Science & Sports Journals

Intake Capacity	Average enrolment
30	40

Institution Based Courses

Modern Mathematics for Parents

Intake Capacity	Average enrolment
30	40

Community Based Courses

Food & Nutrition	—	Group 35
Cutting & Tailoring	—	Group 35

The places of placement for the Post M.A. Diploma Students

SCERT
DIET
NGO
NLM
NIEPA
Departments/Centres of Adult, Continuing Education & Extension.

Discipline-wise Preference of the Students in one year Post M.A. Diploma

Discipline		— **Preference Average**
History		30%
Political Science		25%
Hindi		15%
Sanskrit		10%
Botany Zoology Physics Chemistry	Sciences	10%
Geography		5%
Others		15%

Preference of the students in case study/dissertation

Adult, Continuing Education (material development literacy, post literacy)	40%
Population Education (Curriculum-Development Training)	30%
other Material	30%

Academic Staff Strength in the Department

Staff-Sanctioned	Position occupied	Programme
Professor Director-1	X	Over All
Assistant Director-1	X	Post M.A. Diploma
Assistant Director-1	1	Adult Education
Assistant Director-1	X	Continuing Education
Assistant Director-1	X	PERC
Project Officer-2	2	Adult Education
Project Officer-1	1	Continuing Education
Project Officer-1	1	PE Club
Project Officer-1	1	PERC

PERC Service Areas

Delhi University
Jawaharlal Nehru University
Jamia-Millia-Islamia
Rohtak University
Kurukshetra University

References

1. University Grants Commission, 1998, *IX Plan Guidelines for Department of Adult, Continuing Education and field Outreach,* UGC, New Delhi.
2. University of Delhi, 1988. *Area Development Approach in Adult, Continuing Education*, DACEE.
3. University Grants Commission, 1998. *New Guidelines for the Colleges*, UGC.
4. Ahmed, Aftab, 1996. *Knowledge and Awareness of Commercial Sex Workers on HIV/AIDS & Sexuality*, Post M.A. Diploma in Adult, Continuing.
5. Rajesh, D.U., 1998. *Helpline Counselling Services, Lessons Learnt,* PERC. ❑

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Financing Research and Development in Engineering Institutions

— Issues Involved

P.B. Sharma*

Teaching alone or teaching and research both as the responsibilities and job functions of teachers in engineering institutions is a matter still being debated in our country. There is a feeling which persists in academic circles that diversion of efforts of a teacher towards R&D usually sacrifices teaching interest. There are teachers who are highly devoted to teaching and spent much of their spare time for preparation of teaching material and innovate in teaching to sustain interest in the class. They obviously do not have much interest in Research and Development which besides being time consuming deprive them of the intellectual freedom which they enjoy as teachers. R&D being time bound and result oriented demands that the teacher devotes his considerable time to the success of the work which often involves managerial functions besides expert guidance.

Being financially rewarding and a means of recognition in the profession, R&D acts as a catalyst to sustain one's interest in innovation and creative research. It also helps a faculty member aspire for a greater original contribution to the growth of knowledge and brings added satisfaction from the application of the knowledge to solve the real life problems. The teaching style of the teachers engaged in R&D along side with teaching exhibits a strong element of professional bias, highly relevant to the students who are to take challenges in their professional career, once they leave the college.

It must, however, be realized that there is a basic difference between teaching and research. Teaching unlike research requires excellent communication skills besides a strong knowledge base. The interest in teaching stems from one's desire to benefit the pupils from the depth of knowledge which the teacher possesses. This interest is further enhanced if those taught respond to learning. A researcher on the other hand works himself or at the most with his team on a challenging problem and his interest in R&D is basically from the satisfaction he derives from the outcome of his research. He creates the necessary facilities for his research from Sponsored Research and Development projects and the hard work pays in the long run as his research establishes him in the profession. Further, the recognition of research is worldwide a motivated teacher is at best recognized and rewarded within his university.

The students in engineering institutions are to be taught by those who take pains in sustaining the interest of the students by constantly updating their teaching material while at the same time commanding a high reputation as practicing technologists, something similar to what is done in medical colleges.

Another point of interest here is in respect of funding of R&D in India. It is pertinent to note that it is the government that is the major financer of R&D expenditure in engineering institutions in this country. The industries only contribute a small per cent to this vital component of intellectual property highly relevant to the growth of the nation's economy. In any case, the R&D expenditure in India is still around one per cent of GNP while the developed nations spend up to 6 per cent of GNP on R&D. The poor spending on R&D speaks for the miserable position in respect of intellectual property generation in India. While, a higher allocation on R&D is essential, the higher technical educational institutions must perform a lot better in respect of effectiveness of their R&D activities.

In this contest we have to look at various issues involved in respect of the Financing of R&D in Educational Institute as well as to assure the effectiveness of R&D activities so that, while on one hand R&D becomes a valid mean to support the growth of Engineering and Technology excellence, on the other the benefit of the R&D efforts are successfully transmitted to the Indian indus-

(Contd. on page 19)

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Library and the Cable Television Network

B.T. Gangu*

Introduction

The technological revolution and the emergence of efficient communication tools together have created diverse channels for access and efficient dissemination of information. The computer, telephone and cable television link up has created a novel media and existing trend in information usage. This link up has made possible for the user to have direct access and wide option to choose from, be it for information or entertainment.

> "The computer, telephone and cable television companies, among others, all see the increasing market for electronic entertainment — and some times information and knowledge — as the next gold rush." Dowlin [1995].

This network is all pervasive and has invaded all walks of life — domestic, educational, official and the commercial sectors. With a cellular telephone and laptop computers the interaction is made portable now. The corporate world has grabbed this golden opportunity and has gone in for options that are unthinkable from the conventional setup, such as the merging of telephone company with the cable television company. In the United States steps are afoot to introduce new legislations to regulate (rather aiming to stimulate) the corporate and public sector world in anticipation of the emergence of a 'wired nation'. The United States authorities have already proposed the creation of an Electronic Inter-State Information Highway [Dowlin 1995], in order to facilitate such a massive leap in information explosion.

The librarians have to take advantage and adapt fast to this new technological trend if it were to be more effective in serving its user community. A library that ignores these pressures will become obsolete and miss the opportunity to be the vehicle of change and development of the community it serves.

Cable Television and Library

Cable television, also known as Community Antenna Television (CATV), is a service, usually privately owned, that sets up a master antenna and from it distributes television signals by means of a wire (coaxial cable) to subscribers in a licensed geographical area [Cabeceiras 1982]. The subscriber must pay for cable television service. Besides entertainment and news, some televised information is also available via cable television. It is in this arena that the library has a scope to involve itself in a gainful manner.

The potential impact of the cable television on the library services is expected to be far reaching. It could transform the library into a vibrant information transmission node, which is radically different from the traditional passive storehouse role. The library could present motion pictures, story sessions, puppet shows, etc, and also conduct educational, cultural, art and craft programs.

The cable operators often maintain studios with minimal production facility and make it available to those interested at fairly reasonable cost. A library that plans to produce its own television programs can do so without having its own studio, by opting for such cable studios. Such of those libraries which are planning to setup their own studios should consider how the equipments it plans to acquire comply with their current or projected cable utilization plans.

Those libraries which have video cassettes as part of their collection can transmit via cable television the video recordings that the users view or borrow often. Such libraries could acquire a slot in the cable television network and transmit its own productions. The libraries thus could fill a void in the existing television programs for good, informative and educational programs.

Library, Cable Television and Distance Education

Distance education courses have a main unit with several centres connected to it. The library could arrange for the transmission of lectures and course materials via the cable television to the centres in its proximity for the benefit of the participants of the distance education programs. The library could also provide the necessary source materials through cable transmission so that the participants would be able to take the course at home as efficiently as the real classroom, by creating a sense of participation through attending the course at a distant college campus.

(Contd. on page 18)

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SPRE SHEET

Gender Gap in Education-II

HDI rank		Female adult literacy			Female primary net enrolment			Female secondary net enrolment			Female tertiary students			Female tertiary science enrolment (as % of female tertiary students)
		Rate (%) 1997	Index (1985 = 100) 1997	As % of male rate 1997	Ratio (as % of relevant age group) 1997	Index (1985 = 100) 1997	As % of male ratio 1997	Ratio (as % of relevant age group) 1997	Index (1985 = 100) 1997	As % of male ratio 1977	Per 100,000 women 1996	Index (1985 = 100) 1996	As % of males 1996	1995
Medium Human Development		—	—	—	88.5	109	95	59.9	129	86	662	—	71	—
46	Trinadad and Tobago	97.0	103	98	99.9	103	100	72.2	97	102	685	159	81	34
47	Hungary	99.0	101	100	96.7	99	99	98.2	134	103	1,965	202	104	28
48	Venezuela	91.6	106	99	83.6	96	103	54.2	181	124	—	—	—	—
49	Panama	90.4	105	99	90.2	100	101	71.7	111	101	—	—	—	36
50	Maxico	87.9	107	95	99.9	100	100	64.0	104	94	—	—	—	26
51	Saint Kitts and Nevis	—	—	—	—	—	—	—	—	—	—	—	—	—
52	Grenada	—	—	—	—	—	—	—	—	—	—	—	—	—
53	Dominica	—	—	—	—	—	—	—	—	—	—	—	—	28
54	Estonia	—	—	—	99.9	100	100	87.4	87	103	2,982	168	102	25
55	Croatia	96.4	105	97	99.9	100	100	73.0	88	102	1,875	—	97	27
56	Malaysia	81.0	116	90	99.9	100	100	68.5	129	115	—	—	—	—
57	Colombia	90.8	105	100	89.4	132	100	78.2	126	105	1,820	142	106	32
58	Cuba	95.9	102	100	99.9	107	100	72.6	96	108	1,223	48	152	35
59	Mauritius	79.2	111	91	96.6	97	100	69.9	141	106	578	696	95	—
60	Belarus	98.5	105	99	—	—	—	—	—	—	3,323	—	110	—
61	Fiji	89.4	108	95	99.9	103	100	84.4	130	100	—	—	—	—
62	Lithuania	99.0	103	100	—	—	—	—	—	—	2,524	77	131	—
63	Bulgaria	97.6	103	99	99.2	102	103	75.4	78	95	3,721	270	151	45
64	Suriname	91.6	—	—	99.9	106	100	—	—	—	—	—	—	—
65	Libyan Arab Jamahiriya	62.9	154	71	99.9	106	100	99.9	122	100	—	—	—	—
66	Seychelles	—	—	—	—	—	—	—	—	—	—	—	—	33
67	Thailand	92.8	107	96	89.2	101	103	46.9	191	97	—	—	—	23
68	Romania	96.7	104	98	99.9	115	100	76.3	80	101	1,892	304	109	38
69	Lebanon	78.3	115	86	74.9	99	97	—	—	—	2,605	—	92	37
70	Somoa (Western)	—	—	—	96.8	98	101	—	—	—	—	—	—	26
71	Russian Federation	98.8	104	99	99.9	107	100	90.7	91	107	—	—	—	34
72	Ecuador	88.8	108	96	99.9	104	100	51.3	79	101	—	—	—	—
73	Macedonia, TFYR	—	—	—	—	—	—	—	—	—	1,552	—	121	38
74	Latvia	99.9	101	100	99.9	100	100	80.5	87	100	2,467	128	125	28
75	Saint Vincent and the Grenadines	—	—	—	—	—	—	—	—	—	—	—	—	—
76	Kazakhstan	—	—	—	—	—	—	—	—	—	3,032	—	118	—
77	Philippines	94.3	105	99	99.9	102	100	78.5	118	102	3,404	—	133	27
78	Saudi Arabia	62.5	152	77	58.0	137	93	52.9	127	82	1,528	190	109	—
79	Brazil	83.9	109	100	94.3	121	94	67.0	136	103	—	—	—	34
80	Peru	83.7	111	89	93.3	98	99	81.1	106	94	—	—	—	—
81	Saint Lucia	—	—	—	—	—	—	—	—	—	—	—	—	—
82	Jamaica	89.6	106	110	95.7	97	100	72.1	111	107	658	160	75	—
83	Belize	—	—	—	99.9	112	100	62.6	105	97	—	—	—	—
84	Paraguay	91.1	106	97	97.0	107	101	60.1	164	97	1,098	—	110	42
85	Georgia	—	—	—	88.6	99	99	75.3	75	99	2,970	—	98	40
86	Turkey	73.9	115	80	98.1	101	98	48.5	134	72	—	—	—	28
87	Armenia	—	—	—	—	—	—	—	—	—	1,066	—	121	—
88	Dominican Republic	82.3	108	99	93.6	94	105	82.1	141	109	—	—	—	—
89	Oman	55.0	206	72	66.7	105	97	65.1	319	96	524	970	97	—
90	Sri Lanka	87.6	107	93	99.9	100	100	79.3	112	109	388	129	69	—
91	Ukraine	—	—	—	—	—	—	—	—	—	—	—	—	—
92	Uzbekistan	—	—	—	—	—	—	—	—	—	—	—	—	—
93	Maldives	95.6	104	100	—	—	—	—	—	—	—	—	—	—
94	Jordan	81.8	130	89	—	—	—	—	—	—	2,492	132	96	35
95	Iran, Islamic Rep.of	66.8	169	81	89.2	120	98	75.8	168	88	1,192	544	60	20
96	Turkmenistan	—	—	—	—	—	—	—	—	—	—	—	—	—
97	Kyrgyzstan	—	—	—	99.3	99	100	78.7	79	102	—	—	—	38
98	China	74.5	122	82	99.9	114	100	65.1	145	88	327	164*	54	—
99	Guyana	97.5	103	99	93.0	93	100	76.4	104	104	886	319	87	24
100	Albania	—	—	—	—	—	—	—	—	—	1,167	108	136	40

Source : Human Development Report 1999, UNDP.

Library and the Cable Television Network

(Contd. from page 15)

The Indian Scenario

India has come now under the impact of the worldwide cable television networks — the 'Star' and the 'CNN'. As a result, number of private cable television operators have setup business even in remote rural areas which has revolutionized the entertainment and information world. Cable television business is expected to grow at a phenomenal pace as the viewership demand increases. Video libraries are mushrooming everywhere to meet the increasing demand of the consumers.

Some of the television networks such as the BBC and the Star TV's Indian channel 'Zee' have a number of informative programs. The Zee TV has recently launched its own exclusively educational program called 'ZeeEd' which at present is trying to impart computer courses for school as well as college levels. The Zee TV also offers career guidance. The Doordarshan, of course, for quite some time has been beaming school as well as higher level University Grants Commission (UGC) programs.

The latest trend is now to introduce vocational, technical and career guidance programs of education telecast by private and state owned satellite channels, and generally made available to clients through cable networks. Today, the Indian viewer has a wide range of informative and educational programs to chose from.

There is ample scope still for the existing channels or exclusively new channels to embark on this fertile field of information dissemination through the rapidly expanding cable television network in India.

The Cable Network and Library Systems in India

The growth of the cable television network has put India in the map of the information world and the libraries in India can no longer function as isolated service centres. The Indian library system will have to rethink and reformulate its attitude and functioning if it wants to be abreast of the changing world.

Many of the indigenous channels have wide range of programs with particular target audience in view. For example, the Doordarshan, Zee and Eenadu TV channels have variety of programs meant or especially the children, youth, women; topical programs such as film, sports based presentations; quiz competitions and games on various topics.

A lot of research goes into the production of these programs. They require varied degrees of information. At times the scenario will change within a short span of time.

The trend now is for the TV channels to build their own databases. The libraries will no doubt be drawn into the hub of things and the library professionals will have to gear up to meet this gigantic new wave.

The most recent technological advancement to enter the arena of information and entertainment in India is the introduction of software for viewing through multimedia PCs with Indian flavour. This has converted the entertainment and educational programs into an existing and interactive one for the viewers in India.

Cable Television and Academic Library Linkage

Proposal for Linkage of IGM Library and CATV

The Indira Gandhi Memorial (IGM) Library is taken here as an example and an attempt is made to assess the possible impact of the CATV on academic library.

The IGM Library forms a part of the Central University of Hyderabad which is situated in the Ranga Reddy district of Andhra Pradesh. It is about twenty kilometers away from the city of Hyderabad. This University offers a number of courses through its modules of Distance Education Program and the Academic Staff College (the orientation and refresher courses), apart from its regular teaching programs.

Out of those who opt for these courses, many are from outstation and therefore are dependent on the not so efficient postal services to receive their course materials, assignments, intimation letters, etc.

In case the library establishes linkage with one of the cable TV channels to transmit the course materials, lectures, etc, then not only the outstation participants but even the local ones will be very much benefited. The university being at a far flung area, the participants have to make special effort to attend the contact classes with not much scope to use the university library facilities. Many of the participants may not have access to a good library, thereby loosing the opportunity to get right kind of materials for study. The link up can facilitate the continuous transfer of information on an interactive basis between the library and the user.

Further, the University of Hyderabad has a School of Performing Arts and Communication which produces a number of interesting and informative video cassettes and film strips as part of its training and educating programs. The city wing of the IGM Library could arrange for the telecast of these programs through a cable network for the benefit of the student community and the society at large.

Conclusion

The library can eventually provide individualized home library service through the cable television network. The current trend in technological development looks exciting. For instance an user who wants to refer a particular document could call a library and have the required information transmitted through the cable and thereof to the users own T.V. set. There is even the possibility that the relevant pages may be projected through the cable network on payment of service charge. All these could take place without the user having to ever stir out of the four walls of his home. Parker's [1993] vision of the future is of a fully networked world which can naturally be expected to transform radically the information transfer as well as the education system. There are companies these days which are experimenting with the transformation of information for individual use via television.

Thus the role of library becomes much more important as the user can get the information from the library through private television companies. These companies may in future obtain on its own the information directly from the library and beam it to the users. The libraries then would in future function as partners in commercial ventures, as indispensable part of an institution, rather than just a service oriented money consuming appendage.

References

Dawlin (K E). 1995. Distribution in an Electronic Environment, or Will There be Libraries as we Know them in the Internet World. *Library Trends* 43, 3; 409.

Rossman (P). 1993. The Emerging Worldwide Electronic University : *Information Age Global Higher Education*. Greenwood, Westport Conn.

Cabeceiras (J). 1982. *Multimedia Library : Materials Selection and Use*. Academic Press, New York. ❑

Financing Research and Development in Engineering Institutions

(Contd. from page 14)

tries in the form of viable technologies, effective designs and improved tools of analysis and decision making. The following issues are required to be given a focus attention :

- The current pattern of funding of higher education in India.
- Current dependence on Government funding for R&D.
- Paridime shift from R&D for intellectual pursuit and career prospects to R&D for assuring National Prosperity.
- Synergetic partnership between the institutions, industries and R&D laboratories — need for a consortium approach.
- Mission orientation for R&D — Focussing on relevance.
- Total Cost Management of R&D projects to assure the efficacy as well as effectiveness of the R&D system.

Currently the expenditure on R&D in India i quite low and the most of it comes from the Government funding while in the advanced countries the expenditure on R&D is largely met from the sponsored projects from the industries. The government provides funds only in areas of strategi importance for countries defence. Further, th R&D in India in engineering institutions is currently pursued primarily for betterment of caree prospects. So long as the dependence on government for funding of R&D countinues it will remai so. For a more meaningful R&D for assuring national prosperity it is essential that the country' industries are motivated to invest in R&D in eng neering institutions so that their continued d pendence on import of technology and know how could be gradually reduced. The nation deserv a better deal in respect of R&D in engineering institutions. Total Cost Management of R&D w have to be the R&D management philosophy if w have to harness innovations and lead through innovative products and services in the nex millennium. ❑

Role of Student Leaders in Population Education

The Population Education Resource Centre, Department of Adult, Continuing Education & Extension, University of Delhi in collaboration with Centre for Adult, Continuing Education, Jawaharlal Nehru University conducted a 'Two-Day Training Programme on Role of Student Leaders under Population and Development Education in Higher Education recently in the Committee Hall, School of Social Sciences-I, Jawaharlal Nehru University. Nearly 75 students participated covering all the three Central Universities of Delhi. The students of 10 colleges of Delhi University also participated in this training programme. The participants included staff of the three Departments of Adult, Continuing Education & Extension of Delhi, i.e., Delhi University, Jawaharlal Nehru University and Jamia-Milia-Islamia.

In the inaugural session, Dr. (Mrs.) Nilofar Kazmi, Joint Secretary, University Grants Commission, Dr. Geeta Katarya, National-Consultant, Professor K. Sundaram, Head and Dean, Delhi University and Dr. S.Y. Shah, Director, Centre for Adult, Continuing Education, J.N.U. participated as resource persons.

Professor K. Sundaram welcomed the participants of the three universities, 10 colleges and the resource persons. He also spoke about the various topics to be addressed by the resource persons. He especially welcomed Dr. (Mrs.) Nilofar Kazmi, Joint Secretary, U.G.C., Professor (Mrs.) Sudesh Nangia, Convenor, U.G.C. Advisory Committee on PERC, Professor K. Srinivasan and Dr. Geeta Katarya, National Consultant. He discussed in detail this first major activity of the third phase to be conducted by PERC, University of Delhi in collaboration with Centre for Adult, Continuing Education, Jawaharlal Nehru University.

Dr. S.Y. Shah, Director, J.N.U. talked about the various objectives of this training programme. The programme is designed to sensitize student leaders on the various emerging areas on Population and Development Education in Higher Education.

Dr. Nilofar Kazmi, Joint Secretary, discussed the historical perspective of Population Education. She said that the UGC initiated Population Education in 1983 through the Population Education Clubs. To further strengthen Population Education Programme in Higher Education, the U.G.C. collaborated with UNFPA and started 12 Population Education Resource Centres in 12 universities of India. Later on, 5 more universities were also provided 'Population Education Resource Centres'.

Professor K. Srinivasan, Executive Director, delivered lecture on Population Foundation of India on Role of the Corporate Sector under Population and Development Education in Higher Education. The ICPD programme of Action envisages a crucial role for the non-governmental sector. In examining the inter-relationship between population growth and many facts of social and economic conditions, Chapter XV of the ICPD Programme of Action recognizes that the private sector has an important role in social development and can be a very useful channel for the delivery of reproductive health and family planning services and the provision of education and information relevant to population and development programmes. Professor Srinivasan discussed in detail the various role of non-governmental sector under Population and Development programme. He also presented a paper on "India Towards ICPD Goals : Role of the Corporate Sector."

In session-II of the first day Dr. Geeta Katarya, National Consultant, U.G.C. and Professor Sudesh Nangia addressed the participants. Dr. Geeta Katarya discussed the new phase and the emerging areas under Population and Development Education in Higher Education. She said that currently there are 17 PERCs to provide technical resource support in the service area Universities on Population and Development Education. She stressed on strengthening research activities and the counselling services for the student youth.

Professor Sudesh Nangia, Convenor, PERC Advisory Committee, U.G.C., discussed on the various emerging trends and issues on Population and Development Education. She stressed on incorporating new emerging issues after the Cairo-Conference in undergraduate and postgraduate curriculum. She cited various examples of developing countries in successfully running Population Education Programmes at the institution level.

In III session, Dr. S.K. Bhati, Director, Centre for Adult, Continuing Education, Jamia-Milia-Islamia discussed Research findings based on the case-studies/dissertations of the students. He said that various Researches are available on IEC, Family Planning, HIV, AIDS, Drug-Abuse and Gender-Issues. He shared the brief findings of some community based researches of Jamia-Milia-Islamia. Dr. Bhati decided to strengthen collaborative action research based on Participatory Methods.

Dr. Mridula Seth, Technical Support Unit, UNFPA, discussed on 'Life Skills Education'. Learning is at the heart of life skills. Life Skills Education is based on the teaching of generic type of life skills in relation to major health and social needs. She said that the pedagogy of life skills education is, therefore, based on co-operative learning participatory activities and experimental learning. She discussed in detail Population Education for better life skills. She also referred her R.K. Karve Memorial Lecture on Population Education at Population Education Resource Centre, S.N.D.T., Mumabi.

Professor Shankar Chaudhary, UNESCO Advisor in his address on 'Counselling & New Emerging Areas & Youth' said that counselling is a confidential dialogue — A process between care provider and client. He cited example of GATHER —

GATHER stands for—

G — Great the client

A — Ask the Problem (be a good listener)

T — Telling the person

H — Helping the client making decision

E — Empathy

R — Return

Professor Chaudhary stressed on strengthening student based counselling. In this regard, he referred Delhi University counselling services under PERC. Peer Group Training must be further strengthened by involving large number student youth of the colleges.

Dr. Sushma Mehr, Assistant Director of the Department discussed on Gender Issues. Gender being Central to the development. Women's movement at grassroot levels will be visible by female education and their empowerment. Woman should be in centre of problem-solving process starting from the family. She said that whole methodology of research is gradually changing due to Gender. Perspective. Dr. Mehr also discussed on Population and Development Interrelationship.

Dr. S.Y. Shah, Director, Centre for Adult, Continuing Education, Jawaharlal Nehru University discussed on Integration of Population Education in Adult, Continuing Education. Dr. Shah maintained that the curriculum of various courses in Adult, Continuing Education have become obsolete as they need radical changes after paradigm shift. In this regard he referred Post M.A. Diploma Course in Adult, Continuing Education of Delhi University and M.A. in Extension Education of Jamia-Millia-Islamia. Dr. Shah told that all the three Universities of Delhi will discuss on the existing curriculum and will suggest modifications as a part of nodal agency programme. He said that the programme is conducted to sensitize the student-leaders of the three Central Universities of Delhi.

Dr. Rajesh, Project Officer and Co-ordinator, PERC discussed the various achievements of Delhi PERC in the last session. Several questions were also asked in the various sessions by the participants.

Suggestions/Recommendations

(1) The participants suggested to convene three days training programme in which half day should be devoted to the field-work.

(2) The grassroot activists should also be invited for sharing the field-based realities and success stories in the field of extension-education.

(3) One or two sessions should be devoted to the sharing of the experiences by the participants themselves.

(4) The programme should be more interactive and participatory.

(5) Follow up training programme should again be conducted to refresh the knowledge gained in this training programme.

National Seminar on Venture Agrobiotechnology

Thapar Centre for Industrial Research & Development (TCIRD) and Thapar Institute of Engineering & Technology (TIET), (Deemed University), Patiala jointly organized a National Seminar on Venture Agrobiotechnology recently. The program was sponsored by Council for Scientific & Industrial Research and University Grants Commission, New Delhi.

The seminar was aimed to review the state of art, assess potentials and identify bottlenecks in the growth of emerging eco-friendly microbial technologies for agrobiotech businesses and environment management covering biofertilizers, biopesticides, solid waste management and bioremediation.

Around fifty delegates from several parts of the country participated in the seminar representing academic and industrial sector. Prof. M.P. Kapoor, Director, TCIRD and Director, TIET presided the inaugural function. Prof. B.N. Jorhi, Dean & Head, Department of Microbiology, GB Pant University of Agricultural & Technology, Pantnagar and Prof. H.S. Garcha, Dean, School of Basic Sciences & Humanities, Punjab Agricultural University, Ludhiana emphasized the role of biotechnology in agriculture towards sustainable and eco-friendly development. For better penetration of different microbial technologies, a focused approach towards public/user awareness, quality control mechanisms for products, technical and fiscal support to small scale businesses alongwith proper R&D is urgently required to develop entrepreneurship. To minimize the use of agrochemicals and chemical fertilizers in present day agriculture, it is necessary to popularize benefits of these eco-friendly microbial technologies among the end users and promote entrepreneurship. Dr. Dinesh Goyal, Organizing Secretary of the seminar highlighted that as long as chemical fertilizers are available to farmers at subsidized rates, it is difficult to establish the market of bioinoculants. The seminar also focused on bridging the gap between the academia and the industry and TCIRD can be used as a conduit for this objective. The delegates presented their research findings and the recommendations were made for the consideration of concerned governmental agencies.

Recommendations

- Effective application of solid waste management is urgently required. The municipal bodies, the Industrial Units and the public and private R&D Institution have to jointly venture into this area in view of the ever increasing generation of wastes.
- Bioremediation of aquatic environment has immediate relevance and the laboratory findings have to be translated to workable technologies. R&D is required to be done for perfecting this at pilot scale and the industrial cooperation is necessary to achieve this. Development of microalgal parks can help in recycling of wastewater, mopping up of a atmospheric CO_2, uptake and removal of nitrates and phosphates from wastewater.
- Remediation of metallic pollutants in the waste streams from metal processing industries is a problem which needs serious attention; although laboratory experiments show some of microbial treatment mechanisms, efforts are required towards technology development at pilot scale.
- Petroleum spills could be remediated by a consortium of microbial inoculants and experimental results shows promising field performance. Large scale applicability is to be promoted by establishing quality mass inoculum production facility.
- Natural products from locally available raw materials is a promising area. However development of appropriate technology for wider application is necessary.
- Development of bioinoculants to specifically address the problems of soil salinity and micronutrient deficiency were recognized. Greater emphasis should be to study microbe-microbe and plant-microbe interactions within the rhizosphere to solve and understand problems of their poor adaptability and region specificity.
- Several entrepreneurs have ventured into the business of manufacturing biofertilizers and biopesticides. However, the industry is growing below its potential. Lack of awareness among farmers, quick response and immediate gains of chemical fertilizers and pesticides in the field conditions and their availability at subsidized rates alongwith non-availability of quality bio-inoculants were recognized as major hurdles in the entrepreneurship development and subsequent market establishment.

AEB Awards

The Academy of Environmental Biology (AEB) has notified the following awards for the outstanding scholars for the session 1998.

Dr. A.K. Pandey, ARS, Senior Scientist, Central Institute of Freshwater Aquaculture, P.O. Kausalyaganga, Bhubaneswar has been selected for Archana Medal-1998. Dr. Chiranjib Chakraborty, Department of Zoology, Vidyasagar University, Midnapore has been choosen for Smt. Snehlata Banerjee Medal-1998 for his Research Paper Published in Proc. Acad. Environ. Biol., 8(1999), which has been adjucated the best. They will be presented a Gold-plated Medal and a Citation each.

Dr. Vineeta Shukla, Department of Biosciences, M.D. University, Rohtak has been selected for DEF Prize-1998, a Young Scientist Award. The Prize includes cash award of Rs. 1000.00 + a Gold Medal + a Citation.

Ms. Meenakshi Rathore, Research Scholar, Environmental Toxicology Lab, Zoology Department, University of Rajasthan, Jaipur has won 10th BRP Medal-1998. Gold-plated Medal and the Certificate will be awarded to her. The Medal is awarded annually to a young researcher (Max. age 30 yrs.) who stands First in Research Presentation Competition.

Mr. E. Murlimohan, Deptt. of Toxicology, Fedrick Institute of Plant Protection & Toxicology, Padappai, Ms. Nalini Jain, Indraprastha University, Kashmere Gate, Delhi-110006, and Mrs. Shikha Vajpayi, Department of Botony, Lucknow University, Lucknow have been recommended for the BPA Certificate-1998 by the Committee constituted during 19th Annual Session of the Academy.

All these Awards & Medals will be awarded to awardees at the Inaugural Function of the 20th Annual Session of The Academy of Environmental Biology (AEB) to be held at Visakhapatnam from December 2-4, 1999. On this occasion a Symposium and BRPM Competition on "Man & Environment : Reflections & Vision for Future" and Theme Discussion on "Environmental Education-Rural Awareness and Urban Rural Linkage" are planned. The main objectives of the sessions are to review and analyse the situations and to provide the scientists and members of AEB a forum for exchange of information and updating the current knowledge of Environment & Toxicology. The programme embraces Paper reading sessions, Invited lectures, Meetings and Group Discussions. For details, please contact Prof. B.V.S.S.R. Subba Rao, Org. Sec, 20th AEB Annual Session, Dept. of Zoology, Andhra University, Visakhapatnam-530 003, Andhra Pradesh.

Workshop on Alternative Sources of Energy

The two days Workshop organised recently under the auspices of the Hydrogen Energy Centre, Banaras Hindu University, Varanasi the distinguished guest Dr. A.K. Mangotra, Secretary to Government of India, Ministry of Non-Conventional Energy Sources, New Delhi remarked that under the IX Plan, in the direction of development of alternative source of energy, the establishment of Hydrogen energy Centre at BHU is an important step forward. He said, very soon in the metropolitan cities of Motors Cycle, Cars etc will be fueled with "Hydrogen" instead of "Petrol", the Hydrogen will be indigenous and free from pollution. Such type of engines shall emit only water vapour and this will be a big step in controlling pollution. The Indian Government is spending 60% of foreign currency only on the import of Petrol. As such, the use of Hydrogen in I.C. engines an indigenous effort with the help of water & solar energy, which is free from pollution also, shall be a valuable national contribution. It was envisaged that research and development in this direction, at International level, is already at full swing under the guidance of Prof. O.N. Srivastava, Coordinator, Hydrogen Energy Centre, Department of Physics, BHU. The chief guest to the workshop Prof. K. Dakshinamurthy, Director CECRI, Chennai said that the use of Hydrogen, through Nickel Metal, Hydride battery could be stored in the form of electricity and vehicles can be made to run on these battery. The participants to the workshop reviewed the programme made at various national centre under the programme and chalked out specific policy to be followed in the direction of R&D activities. Eminent Scientists Dr. U.K. Prasad (Hyderabad), Dr. V. Anantha (Chennai), Dr. (Mrs.) R. Ramprabhu and Dr. M. Raghwan (Madras), Dr. J.R. Meena (New Delhi) and others highlighted their research works at the workshop.

The Programme Coordinator, Hydrogen Energy Centre, BHU, Prof. O.N. Srivastava enlightened the participants of the workshop in regard to the research and development work being carried on in this direction at various national and international centres. Other scientists of the BHU, Prof. S. Chandra, Prof. B.B. Bansal, Prof. S.P. Singh, Prof. S.N. Upadhyay & Dr. A.K. Singh presented their research papers. At the end of the workshop Prof. Y.C. Simhadri, Vice-chancellor BHU honoured the chief guest Prof. K. Dakshinamurthy, Director, CECRI, Chennai by presenting BHU emblem.

AIU NEWS

Gondwana Yuva Utsav 1999

Sponsored by the Association of Indian Universities (AIU) and Department of Youth Affairs & Sports, Govt. of India the much awaited West Zone Inter University Youth Festival 99, named the "Gondwana Yuva Utsav" was inaugurated in a glittering function by Hon'ble Chief Justice of M.P. High Court Mr. A.K. Mathur in Manas Bhawan. The function was presided over by Prof. Sureshwar Sharma, Vice-chancellor of the host university, Rani Durgavati Vishwavidyalaya.

Hon'ble Chief Justice Mr. A.K. Mathur delivered the inaugural address and said that the students in general and budding artistes, in particular, derive full advantage from such 'Yuva Utsavs' to strengthen the spirit of friendship, the fellowship and to promote the feeling of harmony. He acknowledged that hosting such an auspicious festival is a matter of pride for the university as well as Jabalpur City.

Prof. Sureshwar Sharma in his presidential address welcomed all the guests to the land of Maharishi Jabali, Bhrigu and Rani Durgavati. He said "I am sure that their spirits were present to bless the young cultural ambassadors." He firmly believed that such festivals encourage cultural exchange and talents which in the long run would help to achieve national integration and enrich our cultural heritage."

Prof. Adya Prasad Mishra, Vice-chancellor of Maharshi Mahesh Yogi Vedic University; the Special Guest, started with a shloka that meant that the function would be successful and it would help in preserving cultural ethos.

Noted film actor Mr. Sharad Saxena and Mr. Sampson David, Senior Cultural Officer, Association of Indian Universities greeted everyone especially young artistes and urged them to strive for togetherness. Mr. David gave a brief note on forthcoming rounds of the festival in other parts of country and opined that he was sure of a well organized conduction of festival by Rani Durgavati Vishwavidyalaya as it had successfully done the same in 1994.

Prof. Yogesh Uprit, Dean Students Welfare expressed his views and hoped that the arrangements of youth festival would better environment as Rani Durgavati Vishwavidyalaya is hosting this youth festival for the third time.

The function was marked by a number of captivating and colourful items like skit, folk dance, folk songs etc. Excellent sound and light arrangement added charm to the show.

Earlier Gondwana Yuva Utsav, the fare of multitude of art forms and varigated richness, a cohesive amalgam of performing arts; was bugled off by a procession from Hitkami Engineering College, Jabalpur. A large number of students from Universities of Madhya Pradesh, Gujarat, Maharashtra, Goa, Daman Diu and Rajasthan participated in the procession with great enthusiasm. The procession started after the green Flag shown by Vice-chancellor Rani Durgavati Vishwavidyalaya Prof. Sureshwar Sharma.

A group from Amravati University presented the famous Dandi Yatra. The procession was a varied fare of performing arts with various cultures blended into a colourful expression. The colourful attire looked gorgeous and they were determined to perform their best. The most popular colour seemed to be yellow and maroon.

Moving with the procession, various groups started performing dances of their respective regions portraying real life through live colours and melody. The dances included Garba, Raut Nacha, Bhil, Ghoomer etc. It was a cultural feast unveiling the true mirror of creative and artistic achievement. The Groups in chronological order was headed by Amravati contingent followed by Aurangabad, Baroda, etc.

The five-day Youth Festival was marked with scintillating cultural events of music, dance, theatre, literary activities and fine arts. Over 800 university youth artistes selected from the various West Zone Universities, after selection from Inter College Competitions, participated in the 23 disciplines of various forms of art. The cultural events took place at various venues and were adjudicated by the renowned judges, invited from

IHM

IN PURSUIT OF EXCELLENCE

ARMY INSTITUTE OF HOTEL MANAGEMENT AND CATERING TECHNOLOGY

The Army Institute of Hotel Management and Catering Technology will be conducting Written Admission Test for admission to Bachelor's Degree in Hotel Management (BHM) on 30 April, 2000 at the following centres :

(1) Pune
(2) Chennai
(3) Secunderabad
(4) Bangalore
(5) Mumbai
(6) Thiruvananthapuram
(7) Ahmedabad
(8) Calcutta
(9) Shillong
(10) Sukna
(11) Delhi
(12) Jalandhar Cantt
(13) Meerut
(14) Lucknow
(15) Jabalpur
(16) Dehradun
(17) Mhow
(18) Jammu

ELIGIBILITY : Children of serving Army personnel and regular army pensioners are eligible to apply. War widows who are in receipt of liberalised pension irrespective of their age are also eligible to apply for admission.

MINIMUM ACADEMIC QUALIFICATION : 10+2 or equivalent examination from a recognised Board with English as compulsory subject. Candidates who have appeared for 10+2 exam and awaiting result may also apply, subject to producing the proof of passing the examination at the time of admission.

AGE : Not more than 22 years of age as on 01 July 2000, other than war widows.

AVAILABILITY OF PROSPECTUS : For further details prospectus alongwith application forms will be available on payment of Rs. 250/- demand draft drawn in favour of Army Institute of Hotel Management and Catering Technology payable at SBI ASC (South) Bangalore code No 4742, from Principal, Army Institute of Hotel Management and Catering Technology, C/o ASC Centre (South) Bangalore-560 007. The sale of prospectus and application forms will commence from 02 Dec. 99 and will close on 28 Feb. 2000. The last date of receipt of application duly completed in all respect will be 15 May 2000. The Institute will have no liability for applications lost in transit; incorrect or incompletely filled. The Institute reserves the right to reject any application without assigning reasons whatsoever.

various parts of the country. As usual, the University of Mumbai stole the show by bagging five out of seven championship trophies. It was a sheer moment of thrill when the team officials and student artistes of University of Mumbai, claimed one after the other prizes in various items. In all the university claimed the Championship in the main events of Music, Dance, Theatre, Literary Activities and Overall Performance. The Fine Arts events were claimed by Indira Kala Sangit Viswavidyalaya and Jiwaji University jointly; while the Overall Runners up Championship was grabbed by the Nagpur University, Nagpur.

The results were declared in a glittering valedictory function, with Chief Guest as the Governor of Madhya Pradesh, His Excellency Bhai Mahavir. On this occasion the other guests of honour included Shri K.K. Gupta, Minister for Higher Education, Madhya Pradesh and Smt. Jaishree Banerjee, M.P. from Jabalpur.

RESULTS

Inter University West Zone Youth Festival-1999

Organized by the Rani Durgavati Vishwavidyalaya, Jabalpur from October 28 to Nov. 1, 1999.

1. **MUSIC**

a) *Classical Vocal Solo (Hindustani or Karnatak)*

i) SNDT Women's University, Mumbai

ii) Devi Ahilya Vishwavidyalaya, Indore

iii) University of Mumbai, Mumbai/Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Consolation : Jai Narain Vyas University, Jodhpur

b) *Classical Instrumental Solo (Percussion)*

i) Indira Kala Sangit Vishwavidyalaya, Khairagarh

ii) M.S. University of Baroda, Vadodara

iii) University of Mumbai, Mumbai

Consolation : Nagpur University, Nagpur

c) *Classical Instrumental Solo (Non-percussion)*

i) University of Mumbai, Mumbai

ii) Swami Ramanand Teerth Marathwada University, Nanded

iii) Rani Durgavati Viswavidyalaya, Jabalpur

Consolation : Shivaji University, Kolhapur

d) *Light Vocal (Indian)*

i) Nagpur University, Nagpur

ii) Jiwaji University, Gwalior

iii) University of Mumbai, Mumbai

Consolation : Rani Durgavati Viswavidyalaya, Jabalpur

e) *Western Solo*

i) University of Mumbai, Mumbai

ii) Nagpur University, Nagpur

iii) Rani Durgavati Viswavidyalaya, Jabalpur

Consolation : Rajasthan Agril. University, Bikaner

f) *Group Song (Indian)*

i) University of Mumbai, Mumbai

ii) Rani Durgavati Vishwavidyalaya, Jabalpur

iii) Devi Ahilya Vishwavidyalaya, Indore & SNDT Women's University, Mumbai

Consolation : Gujarat University, Ahmedabad

g) *Group Song (Western)*

i) University of Mumbai, Mumbai

ii) Nagpur University, Nagpur

iii) Sardar Patel University, Vallab Vidyanagar

Consolation : Amravati University, Amravati and Rani Durgavati Vishwavidyalaya, Jabalpur

2. **DANCE**

a) *Folk/Tribal Dance*

i) University of Mumbai, Mumbai

ii) Rajasthan Agril. University, Bikaner

iii) Jai Narain Vyas University, Jodhpur

Consolation : Bhavanagar University, Bhavnagar

b) *Classical Dance*

i) Gujarat University, Ahmedabad

ii) University of Mumbai, Mumbai

iii) Barkatullah Viswavidyalaya, Bhopal

Consolation : SNDT Women's University, Mumbai

3. **THEATRE**

a) *One Act Play*

i) University of Mumbai, Mumbai

ii) SNDT Women's University, Mumbai

iii) Devi Ahilya Viswavidyalaya, Indore

Consolation : Dr. B.S. Ambedkar Marathwada University, Aurangabad

b) *Mime*

i) University of Mumbai, Mumbai

ii) Devi Ahilya Vishwavidyalaya, Indore

iii) Amravati University, Amravati

Consolation : Rani Durgavati Vishwavidyalaya, Jodhpur

c) *Skit*

i) University of Mumbai, Mumbai

ii) Dr. B.S. Ambedkar Marathwada University, Aurangabad

iii) Bhavnagar University, Bhavnagar

Consolation : Dr. Harisingh Gour Vishwavidyalaya, Sagar

d) *Mono Acting*

i) M.S. University of Baroda, Vadodara

ii) Banasthali Vidyapith, Banasthali

iii) SNDT Women's University, Mumbai

Consolation : University of Mumbai, Mumbai

e) *Mimicry*

i) Banasthali Vidyapith, Banasthali

ii) North Gujarat University, Patan

iii) University of Mumbai, Mumbai

Consolation : Amravati University, Amravati

4. LITERARY EVENTS

a) *Quiz*

i) University of Mumbai, Mumbai

ii) Devi Ahilya Vishwavidyalaya, Indore

iii) Nagpur University/Jiwaji University/Jai Narain Vyas University

b) *Debate*

i) University of Mumbai, Mumbai

ii) Barkatullah Viswavidyalaya, Bhopal

iii) Shivaji University, Kolhapur

Consolation : Jai Narain Vyas University, Jodhpur

c) *Elocution*

i) University of Mumbai, Mumbai

ii) Jiwaji University, Gwalior

iii) Shivaji University, Kolhapur

Consolation : Gujarat University, Ahmedabad

5. FINE ARTS

a) *On the Spot Painting*

i) Dr. B.S. Ambedkar University

ii) University of Mumbai, Mumbai

iii) Amravati University, Amravati

Consolation : Jiwaji University, Gwalior

b) *Collage*

i) Indira Kala Sangit Vishwavidyalaya, Kheragarh

ii) University of Mumbai, Mumbai

iii) Jai Narain Vyas University, Jodhpur

Consolation : Dr. B.S. Ambedkar Marathwada University, Aurangabad

c) *Poster Making*

i) Jiwaji University, Gwalior

ii) Dr. B.S. Ambedkar Marathwada University, Aurangabad

iii) SNDT Women's University, Mumbai

Consolation : Jawaharlal Nehru Krishi Viswavidyala, Jabalpur

d) *Clay Modelling*

i) Indira Kala Sangit Vishwavidyalaya, Kheragarh

ii) Nagpur University, Nagpur

iii) Amravati University, Amravati

Consolation : Sardar Patel University, Vallabh Vidyanagar

e) *Cartooning*

i) Jiwaji University, Gwalior

ii) University of Mumbai, Mumbai

iii) Amravati University, Amravati

Consolation : Dr. B.S. Ambedkar Marathwada University, Aurangabad

f) *Rangoli*

i) SNDT Women's University, Mumbai

ii) Nagpur University, Nagpur

iii) Rani Durgavati Vishwavidyalaya, Jabalpur

Consolation : Banasthali Vidyapith, Banasthali

Championship Trophy

Music : University of Mumbai

Dance : University of Mumbai

Theatre : University of Mumbai

Literary Events : University of Mumbai

Fine Arts : Indira Kala Sangit Vishwavidyalaya/Jiwaji University

Overall Runners up : Nagpur University, Nagpur

Overall Champion : University of Mumbai, Mumbai

News from UGC

Countrywide Classroom Programme

Between 22nd November to 30th November, 1999 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programmes are telecast on the Doordarshan's National Network from 9.30 to 10.00 a.m. every day except on Saturdays & Sundays. These programmes are also telecast on Doordarshan's National Network from 6.00 to 6.30 a.m. on all days of the week. On DD2 International Programme will be shown at 11.00 to 12.00 hours on Saturdays only.

22.11.99
"Printing Techniques-1 : Letter Press"
"Boat Building — A Tradition Marginalised"
"Design — History"
"Scientific Technical Mission of Transantarctica"

23.11.99
"Pollution-1"
"Harnessing Biodiversity"
"Design — Today
"Deep Sea Mission"

24.11.99
"Feeling Good-2"
"Artificial Heart Valves"
"Design — Process"

25.11.99
''व्यक्तित्व''
"The Enchanted Loom : Perception of the Mind"
"Question Time-129"
"The Hindu Temples Sikhara-1"

26.11.99
"Functional English-2"
"Blooming Bud — Priyanka Sacheti"
"Design — Education"

27.11.99
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"Wooden Imparts : Block Printing"
"Dark Circle-1"
"Touch of Genius"

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29.11.99
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"Chrome Recovery and Reuse"
"The Story of Print"
"Touch of Genius"

30.11.99
"Pollution-2"
''हमारी पृथ्वी : 1 वायु''
"Prints & Print Making"
"Vasundhara : The Dying Lake Hussain Sagar"

News from Abroad

TWAS Lectureships in Science

The objective of the Lectureship Programme is to provide those associated with scientific and other appropriate institutions in developing countries with the opportunity to establish and enhance collaboration with colleagues in all fields of science, technology and key areas of environment and development. Within this Programme, prospective host institutions can invite eminent experts in science, technology and sustainable development, to lecture and hold discussions in their countries. Lecturers and hosting institutions will be expected to provide comprehensive reports on completion of the visits.

Institutions in developing countries wishing to invite a Lecture under this Programme are requested to give the name of persons who might be invited to lecture. As the programme is striving towards providing equal opportunities, nominations for women will be particularly welcomed.

The travel (round-trip, economy fare) expenses of lecturers will be borne by the Programme, while host institutions in developing countries will be expected to cover all local expenses as well as to make local arrangements. Under normal conditions, no more than one lectureship per country per year will be approved. Experts who are planning to visit a developing country for purposes other than those relating to this Programme may be requested to give lectures at no financial cost to the Programme.

— A limited number of Lectureships will be made available to institutions in Eastern Europe and the former Soviet Union which lack contacts with scientists from other parts of the world.

Interested Institutions may send an application form to "The Third World Academy of Sciences (TWAS), The Abdus Salam Centre for Theoretical Physics (ICTP), I-34014 Trieste, Italy. Phone : (+39-040)2240-387 - Fax : (+39-040)224559, E-mail:twas@ictp.trieste.it"

BOOK REVIEW

A Marvellous Reading

Sistla Rama Devi*

Govind Bhattacharya. Origin and Evolution. New Delhi, Minerva Press, 1999. Pp. 474. Rs. 300/-.

Govind Bhattacharya is aptly suited to recount this monumental tale, the incredible epic story of our Universe, our Earth, the *Origin and Evolution* — the truth enabling the man to perceive himself and his world.

The book *Origin and Evolution* as the author rightly says, attempts to fill a gap in the Indian Scientific Literature meant for popular reader — the layman. It gives the reader an idea about how everything in this Universe came into being. Beginning with origin of Universe, the book describes systematically and chronologically all the important subsequent developments till the evolution of *Homo Sapiens* on the earth.

The book is divided into two parts 'Origin' and 'Evolution' and is organised into 15 chapters. Chapter-I entitled 'Let There Be Light' starts with the discovery of cosmic microwave background radiation in 1964 and explains the nature of the expanding Universe, reviewing the major scientific discoveries which gradually led to our present understanding of Big Bang Theory. Chapter II 'Being And Nothingness', describes the event of the origin of the universe from a quantum fluctuation of the vacuum. The chapter broadly describes the principles of quantum mechanics and then traces the subsequent developments. 'The Lord Is Subtle', Chapter III explains some of the theories of Modern Physics necessary to understand the future developments in the new born Universe. It explains principles of symmetry, concept of field and breaking of symmetries which led to the complexities in structure of Universe. Chapter IV 'The Cosmic Dance Of Nataraja' picks up the story from Chapter II and describes the successive breaking of symmetries and the phenomenon of inflation in the very early Universe. This chapter describes the story of universe upto 10^{-10} seconds from the beginning of the Universe. Chapter V 'Shape Of Things To Come' describe the event in the nascent Universe during the first few minutes and then takes the story upto about a million years. 'Dark Was The Night' is the title of chapter VI which describes the formation of stars and galaxies and establishment of the large scale structure of the Universe. 'And quiet Flows The Dawn' Chapter VII brings the story unto the dawn of the Earth. It starts with the solar system and takes us to the formation of the Earth and the moon. Chapter VIII 'The Golden Thread of Life' is devoted to life and living process. Starting with the Carbon Dioxide, Water, Oxygen and Amino Acids it goes on to describe the story of the discovery of the DNA molecules. 'The Breath Of Life' Chapter IX continues with origin of life. It gives an account of various experiments conducted to understand the origin of life and describes successive developments in the origin and building up of life leading to the evolution of blue-green algae and finally to the development of eukaryotes. Chapter X 'Voyage into the Origin' starts with voyage of Charles Darwin and narrates his theory of origin of species, combines it with the modern developments in the field of molecular biology and introduces the theory of the plate tectonics which played a significant role in evolution of life. Chapter XI 'The Blossoming Flowers' explains the system of dividing the history of the earth into geological eras, periods and epochs. It describes the developments in the evolution of life during pre-cambrian and

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*S.R.A., *University News, Association of Indian Universities, 16 Kotla Marg, New Delhi-110 002.*

paleozoic eras and brings the life upon the land and ends with great extinction at the end of the permian period. 'Glory And Extinction' Chapter XII describes the age of Reptiles and carries us till the extinction of Dinosaurs at the end of the mesozoic era. Chapter XIII, 'The Conquest and the Ascent' describes evolution of mammals and ends with the closing of Tertiary period and onset of the great Ice age that followed in the next pleistocene epoch. 'Altius Citius Fortius; Chapter XIV describes the evolution of the primates — monkeys, apes and early hominids. Chapter XV 'Spires of El Dorado' culminates the evolution of *Homo Sapiens* starting with the advancing ice sheets of pleistocene epoch. The chapter also describes the life of early man, the dawn of religion and human consciousness.

The excerpts from the biographies of the scientists and real incidences simulated the feeling of reading a travelogue in which the reader is also a part of fascinating journey through space & time. Starting from a formless void 17 billion years ago, tracing the evolution of galaxies, journeying through the infinite progression of resolute and resilient life one finally arrives unto oneself, realising that the entire universe is but one single organism and that in this continuously changing world every being is significant.

The language of the book is easy to comprehend. The technical terms and scientific theories are explained in easy language. The qualities like rhythmic language, starting the chapters with stanzas of great poems, catchy titles, systematic presentation, paper quality and cover design (the painting 'The Cosmic Athlete' by Salvador Doli) have made the book all the more impressive. It contains some environmental education value also. The price of the book is quite reasonable. In all, the book is extraordinarily nice. Every library should indeed have a copy of it. ❑

BANARAS HINDU UNIVERSITY

EGISTRATION TO PH.D/C'AKRAVARTI PROGRAMME

Applications are invited for registration to Ph.D./C'akravarti course for January, 2000 Term in different disciplines (except Agriculture) from those holding valid certificate of NET/GATE.

The prescribed application form alongwith relevant details can be obtained from the Office of the Controller of Examinations, Banaras Hindu University, Varanasi-221 005 on payment of Rs. 100/- on all working days or through post by sending an "A/c Payee" State Bank of India Demand Draft for Rs. 130/- drawn in favour of the Controller of Examinations, B.H.U. payable at State Bank of India, B.H.U. Branch (Code No. 0211) alongwith a request letter and Self-addressed unstamped envelope of size 32 x 26 cms. superscribing APPLICATION FOR Ph.D. REGISTRATION.

Commencement of sale of forms	November 15, 1999
Last date for receipt of requisition for sending the form by post	November 25, 1999
Last date for sale of forms from the Counter.	December 18, 1999

The University shall not be responsible for postal delay or non-delivery of post.

The completed application forms must reach the Controller of Examinations, Banaras Hindu University, Varanasi-221 005 latest by 5 p.m. on **December 20, 1999.**

REGISTRAR

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities (September-October 1999)

HUMANITIES

Geography

1. Hanjagi, Ashok Devendrappa. **Some aspects of urbanization in Belgaum Division.** (Dr S R Patil), Department of Geography, Karnatak University, Dharwad.

2. Sneh Lata. **Rural-urban differentials in some select aspects of demography in India: A spatial view.** (Dr Nina Singh), Department of Geography, Maharshi Dayanand University, Rohtak.

History

1. Jadhav, Bhagyashree Mahadev. **Dr Appasaheb Pawar: A study of his life and career.** (Dr B D Khane), Department of History, Shivaji University, Kolhapur.

2. Jite, Y R. **Hyderabad mukti sangramatil Nanded Jilhyacha sahbhag, 1920-1948.** (Dr Nagarale N N), Department of History, Swami Ramanand Teerth Marathwada University, Nanded.

3. Laxmi Naraian. **Rao Tula Ram and his successors, 1857-1947.** (Dr S K Manak), Department of History, Maharshi Dayanand University, Rohtak.

4. Pathan, Ismail Husensaheb. **Kolhapur: A study of twenty five years of industrial development, 1949-74.** (Dr M P Patil), Department of History, Shivaji University, Kolhapur.

5. Sukhjinder Kaur. **Press politics and public opinion in Punjab, 1900-1919.** (Dr B D Yadav), Department of History, Maharshi Dayanand University, Rohtak.

Language & Literature

Assamese

1. Bhuyan, Sarala. **Asamiya giti sahitya: Eti adhyayana, Jonaki yuga aru uttar Jonaki yuga.** (Dr K Deka), Department of Assamese, Dibrugarh University, Dibrugarh.

2. Das, Dwijen. **Ananta kandalir Ramayana: Path sameeksatmak aru aitihasik adhyayana, Ayodhya aru Aranyakanda.** (Dr Ramcharan Thakuria), Department of Assamese, Gauhati University, Guwahati.

3. Goswami, Mayasri. **Caryapad aru Asamiya bhasa: Eti tulanamulak adhyayan.** (Prof B K Boruah), Department of Assamese, Dibrugarh University, Dibrugarh.

4. Saikia, Prabin. **Khamti bhasa aru samaj: Eti adhyayan.** (Prof S N Goswami), Department of Assamese, Gauhati University, Guwahati.

English

1. Rathi, Sudha Balkrishna. **A study of the themes and techniques in the plays of Harold Pinter.** (Dr P B Patil), Department of English, Shivaji University, Kolhapur.

2. Verma, Sarla. **W B Yeats: A study in poetic growth and excellence.** (Dr R K Bajpai), Department of English, Devi Ahilya Vishwavidyalaya, Indore.

3. Waghmode, Sambhaji Tukaram. **The transformation of the black self in the black autobiography.** (Dr P R Kher), Department of English, Shivaji University, Kolhapur.

Hindi

1. Bagi, Madhavi Sanjay. **Dewesh Thakur ke upanyason mein chitrit nari patron ka anusheelan.** (Dr P S Patil), Department of Hindi, Shuvaji University, Kolhapur.

2. Gambhire, Arun Kisan. **Harishankar Parsai ke nibandhon mein vyanga: Vividh ayam.** (Dr A G Chavan), Department of Hindi, Shivaji University, Kolhapur.

3. Kuchekar, Bharat Sahebrao. **Bhishma Sahni ke katha sahitya mein chitrit samaj jeewan.** (Dr P S Patil), Department of Hindi, Shivaji University, Kolhapur.

4. Mishra, Meena. **A socio linguistics approach to Hindi in urban Bhopal.** (Dr H L Shukla), Department of Linguistics, Barkatullah Vishwavidyalaya, Bhopal.

5. Mishra, Sunita. **Manovishleshan shastra ke alok mein Prasad ke katha evam natya sahitya ka vishisht anusheelan.** (Dr Ramesh Soni), Department of Hindi, Devi Ahilya Vishwavidyalaya, Indore.

6. Shinde, Maruti Dagadu. **Hindi upanyason mein chitrit vaishya jeewan.** (Dr P P Pathak), Department of Hindi, Shivaji University, Kolhapur.

7. Syam Rao, M. **Muktibodh: Fantasy aur rachana prakriya.** Department of Hindi, University of Hyderabad, Hyderabad.

8. Thakur, Shiv Kumar Singh. **Dr Shiv Prasad Singh ke upanyason mein jeewan mulyon ka chitran: Ek sameekshatmak adhyayan.** (Dr Sushma Dubey), Department of Hindi, Rani Durgavati Vishwavidyalaya, Jabalpur.

Malayalam

1. Girish, P M. **Socio-linguistic nature of cities in Kerala.** (Dr G Balasubramanian), Department of Malayalam, University of Calicut, Calicut.

Marathi

1. Joshi, Nila Girish. **Marathi loksahityateel istrigeetancha vangmayeen abhyas.** (Dr V K Shinde), Department of Marathi, Shivaji University, Kolhapur.

2. Kadam, Mahendra Sudam. **Kadambarichi sankalpana ani Marathi navkadambari: Swarup chikitsa.** (Dr R N Thakur), Department of Marathi, Shivaji University, Kolhapur.

3. Khilare, Shashikant Namdeo. **Ambedkari chalval ani dalit natyakriti.** (Dr K B Kundap), Department of Marathi, Shivaji University, Kolhapur.

4. Walke, Ramchandra Nana. **Gyaneshwarichya Marathi anuvadancha abhyas.** (Dr S R Chavan), Department of Marathi, Shivaji University, Kolhapur.

Sanskrit

1. Asha Rani. **Keraliya Vidvan V Krishnan Thampy ke Sanskrit roopakon ka sahityika adhyayana.** (Dr Manjul Gupta), Department of Sanskrit, Maharshi Dayanand University, Rohtak.

2. Batra, Naresh Kumar. **Vartika pariprekshya Katyayanasya sameekshatmakam adhyayana.** (Dr B L Bhartiya and Dr V P Upadhyaya), Department of Sanskrit, Panjab University, Chandigarh.

3. Kamala Devi, K G. **Kundamala: A critical study.** (Dr Shanthi Chandrakamata), Department of Sanskrit, University of Calicut, Calicut.

4. Nema, Sangeeta. **Bhas ke roopakon ka shaili vaigyanik adhyayan.** (Dr K B Panda), Department of Sanskrit, Barkatullah Vishwavidyalaya, Bhopal.

5. Om Parkash. **Yukti Dipika: Ek adhyayana.** (Dr Sudha Jain), Department of Sanskrit, Maharshi Dayanand University, Rohtak.

Telugu

1. Bhagyalakshmi, M. **A contemporary life depicted in Tallapaka poet's literature.** Department of Telugu, Potti Sreeramulu Telugu University, Hyderabad.

2. Srinivasulu, Tiruvaipeta. **Telangana janapada kathalu samajik pratiphalanam.** Department of Telugu, University of Hyderabad, Hyderabad.

Philosophy

1. Jyotirmoyee Devi. **Sikhism in Assam.** (Dr Nilima Sarma), Department of Philosophy, Gauhati University, Guwahati.

2. Muraly, C D. **Madhyamika dialectics and deconstruction.** (Dr V C Narayana Das), Department of Philosophy, University of Calicut, Calicut.

COMMUNICATION

Noble Approach Towards Nobel Prize

Noble Laureates in Physics : Mythili and Raja Ganesan [*Univ. News*. 37(41), October 11, 1999, P. 9-11] have carried out a very useful analysis of Nobel Laureates in Physics which may help formulating our Science Policy to encourage research of Nobel Prize calibre. I was surprised to read Professor C.N.R. Rao saying that we should hope to produce at least 70 Nobel Laureates in science by the year 2025. However, the original reference of Professor Rao [*Univ. News* 37(16), April 19, 1999] mentions the number as 20 (and not 70) and that too as a part of 10 suggested national calendar events as follows :

		Target Date
1.	Investment is S&T, 2-3 per cent GDP	2005
2.	Safe drinking water for all	2005
3.	Software export, 3-4 per cent of world business	2005
4.	Complete literacy	2010
5.	Eradication of malaria and polio	2010
6.	Food security and eradication of malnutrition	2015
7.	50 Olympic medals	2015
8.	Population stabilisation	2020
9.	Economic leadership in the world	2025
10.	20 Nobel Laureates in Science	2025

Professor Rao has stressed, and rightly so, that capacity building for science-based development be given the greatest importance for the next 2 decades or so. Olympic medals and Nobel Prizes have certain things in common. Both need pursuit of excellence, powerful motivation and ideal infrastructure facilities. But perhaps the similarities end there. It is interesting to note that according to a study by a British psychologist Professor Michael Howe and his colleagues at Exeter University (*The Hindu*, October 6, 1998), "possession of innate talent is a myth", and key to genius or excellence is "opportunities, encouragement, training, motivation, self-confidence, and most of all — practice." In other words, it is hard work that brings success. Professor Howe's conclusions were arrived at after examining outstanding performances in arts and sports. The opponents of Professor Howe's theory agree to practice and other factors as no doubt important contributions, but not enough to explain great creative works.

It is not known whether Professor Howe's theory could be extended to scientific genius. Take the case of the 1965 Nobel Laureate Richard Phillips Feynman (1918-1988) who developed a stature amongst physicists even when he was in his 20's. He was a master calculator, an architect of quantum theories, discoverer of Feynman diagram, and an *arete* (Greek word for shining quality) star. He had at least 3 more achievements, each of which could have earned him a Nobel Prize. Feynman had impatience with mediocrity and originality was his obsession. The mathematician Marc Kac said :

There are two kinds of geniuses, the "ordinary" and the "magicians". An ordinary genius is a fellow that you and I would be just as good as, if we were only many times better. There is no mystery as to how his mind works. Once we understand what they have done, we feel certain that we, too, could have done it. It is different with the magicians. They are, to use mathematical jargon, in the orthogonal complement of where we are and the working of their minds is for all intents and purposes incomprehensible. Even after we understand what they have done, the process by which they have done it must be terribly frustrating for a brilliant young mind to cope with the mysterious ways in which the magician's mind works. Richard Feynman is a magician of the highest calibre.

James Gleick brought out a 500-page biography in 1993 and aptly titled it "GENIUS — The life and science of Richard Feynman" (Vintage Books, a Division of Random House Inc., New York). It was a national bestseller and it received outstanding reviews by all prominent newspapers and magazines in U.S.A. Life stories of such brilliant scientists can be powerful motivators. Our science teachers can narrate them in schools and colleges to thrill young minds and to encourage creativity, innovation, and originality.

The purpose in highlighting the story of Feynman was to give a sample glimpse of a Nobel Laureate in science to support Mythili-Raja Ganesan analysis for science policy implications and to remind our science and science-education policy makers that the 20 Nobel Laureates visualised by Professor C.N.R. Rao are probably already born somewhere — it is we who have to take our science to a high pedestal, nurture the entire science talent, and identify the geniuses.

Corporate organisations in U.S.A. are very much concerned with stimulating creativity and innovation. The Human Resource Institute in U.S.A. has suggested many ways to induce creativity e.g. associative thinking skills, formulate questions to provoke thought, imagine various scenarios, be a selfish listener, study the biography of creative people and read about the process of invention etc. (*Research-Technology-Management*, March-April 1997, p. 57-58). In institutions of higher education and research and development organisations of government (like Council of Scientific and Industrial Research), public and private sectors in India, there is a great need to stimulate creativity, innovation, and excellence. In reality, probing and scouting has to start in schools. While there can be many ways of stimulating creativity, three basic approaches come to my mind : Pure Instinct, Positive Attitudes and Strategic Thinking. Much debate is going on these aspects in the area of management science and even books have been written. But there is a possibility that these aspects could become percusors of creative science of Nobel Prize calibre. Much effort will be needed to transmit the message — mentoring, coaching, training and role-model by teachers. For every Nobel Prize Winner, there are 15, 20, or more meritorious nominations and therefore our aim should be to stimulate and nurture creativity and excellence among a fairly large number of youngsters.

Kathy Kolbe, author of "Pure Instinct" (Random House Inc., New York, 1996) identifies 4 striving instincts — probe, pattern, innovate, and demonstrate. Awareness about instinct, its benefits, and instinct-based training amongst youngsters can motivate and improve performance. Attitude is the inner strategist. It is well taken care of in sports and arts but is seldom appreciated in the context of problem-solving and creativity in science. A person with a positive attitude possesses enormous self-confidence. Creativity in science requires a delicate balance between *hubris* (defined as insolence or arrogance resulting from excessive pride) and *humility* (Craig Loehle, *"Thinking Strategically — Power tools for personal and professional advancement"*, Cambridge University Press, 1996). The key to maintaining this balance is the spirit of detachment, true tranquility, and honesty. As Craig Loehle says, "constant dwelling on getting the Nobel Prize or even the next promotion poisons the intuition and receptivity to new and subtle ideas. By harnessing positive emotional states one can achieve more than one would otherwise dare to imagine." Strategic thinking smoothens the path of creativity. Strategic thinking skills can be learnt and developed. Astonishing levels of professional productivity can be structured on 3 pillars : skill, motivation, and strategic use of time and effort. While this is more true for profit-making endeavours, fundamental research scientists of today also need to be made aware of the tools for generating new ideas (strategic thinking) and applying them through to a completed product. Some of the crucial components of strategic creativity are unconventionalism, surfing, intense concentration, and failures. To complete real task, even a genius must concentrate but this is hard work and requires discipline. A vague initial concept or intuition has to be converted into a substantiative discovery i.e., made operational and measurable and communicated clearly.

Whatever be the number of Nobel Prizes Indian scientists will win in the next 25 years, the bottom line is that our science-policy makers in the government, our leaders of science, and no less important — our private philanthropists (how otherwise do we explain Indian Institute of Science, Bangalore, ranking 18th amongst world universities and first in the Asia-Pacific region) have to play a key role in developing and sustaining "excellence-friendly" atmosphere in the temples of learning and research.

Professor Bharat R. Sant
Chairman, Management and
Resource Development
Foundation (MRDF),
C-14/2 Kakateeyanagar,
Habsiguda, Hyderabad-500 007.

CLASSIFIED ADVERTISEMENTS

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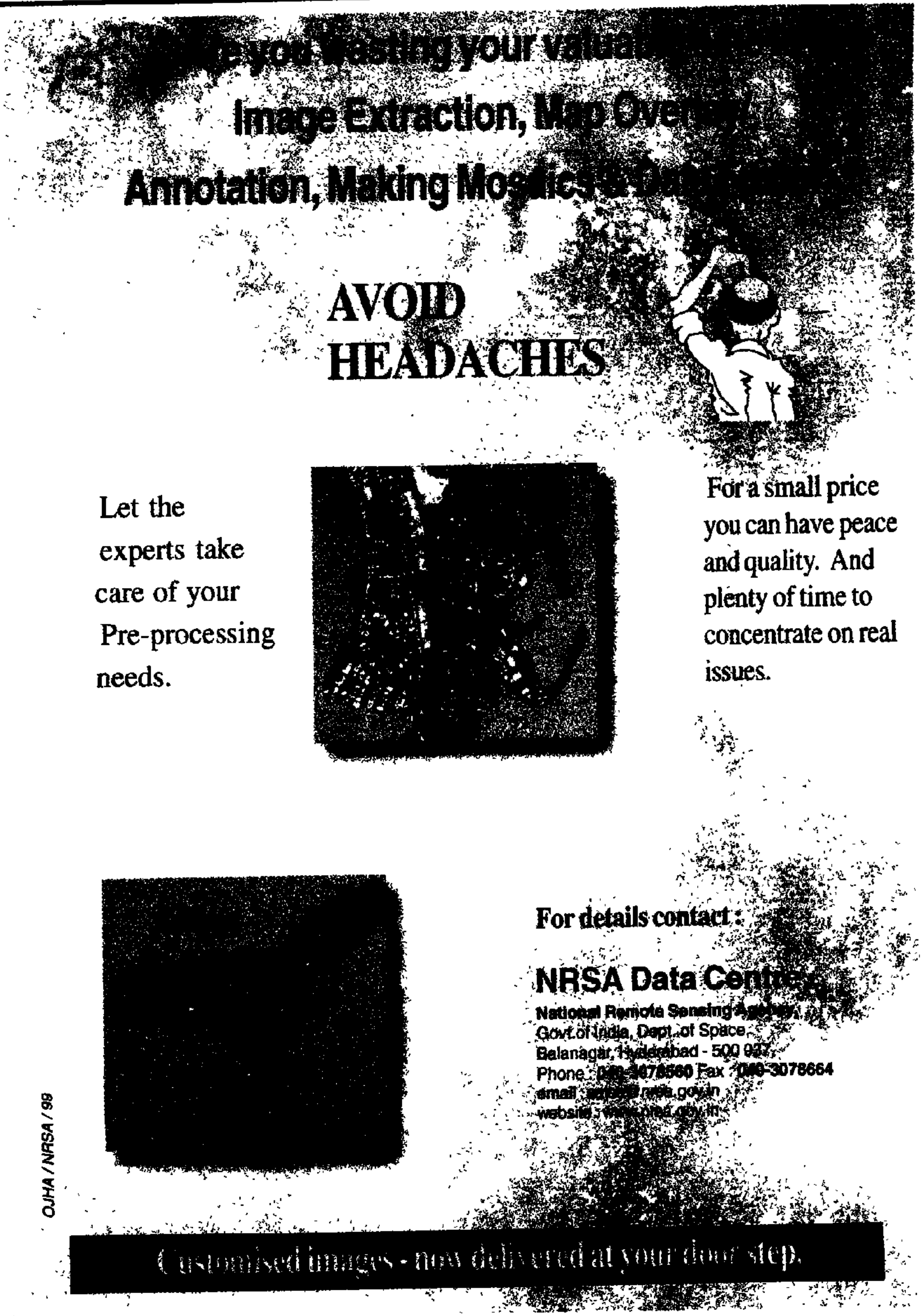

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